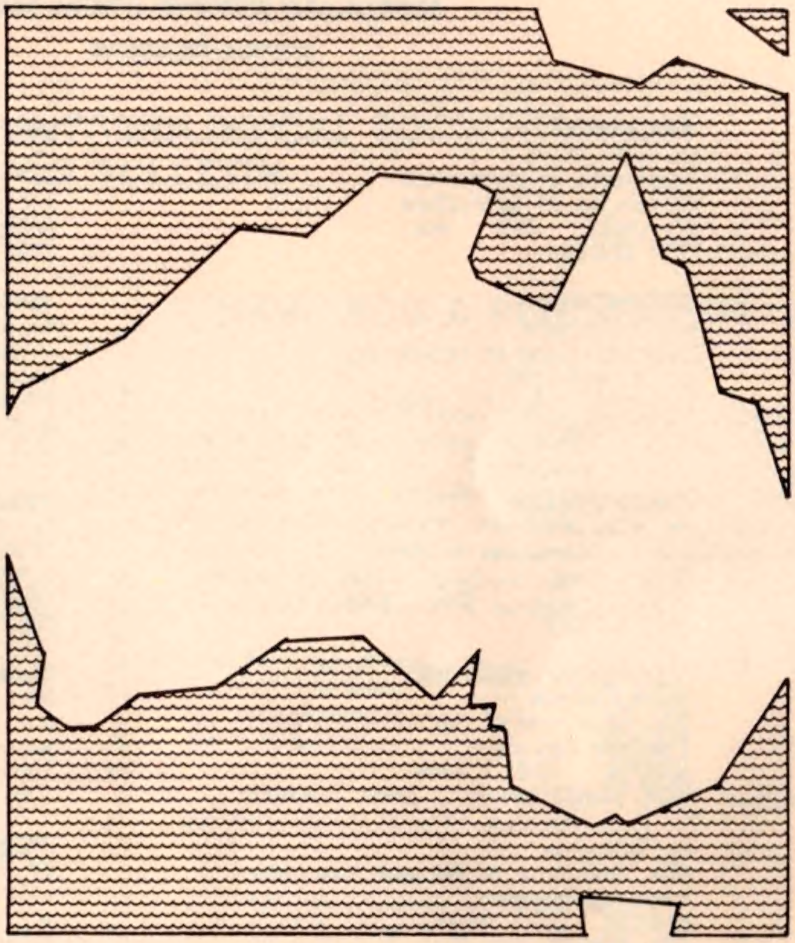
Australian Entomological Society



NEWS BULLETIN

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AUSTRALIAN ENTOMOLOGICAL SOCIETY NEWS BULLETIN

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COPY DEADLINE FOR NEXT ISSUE

Copy deadline for the next issue of the News Bulletin will be Friday, July 26.

NOTICE

MATERIAL IN THIS BULLETIN DOES NOT NECESSARILY REPRESENT THE VIEWS OF THE AUSTRALIAN ENTOMOLOGICAL SOCIETY, AND SHOULD NOT BE REFERRED TO OR REPRODUCED WITHOUT PERMISSION OF THE AUTHOR OF THE MATERIAL.

HAVE YOU A RED STICKER?

If your address label on the envelope containing this News Bulletin carried a red sticker then the Treasurer has not yet received your Society subscritpion for 1985. These subscriptions fell due and payable on January 1, 1985. Since the deadline for concession rates expired on March 1 the full rates are now payable as follows:

Ordinary Members	$30.00
Student Members	$15.00
Retired Members	$15.00
Joint Members	$35.00

Please send payment at your earliest convenience to the Treasurer:

Mr T.A. Weir
CSIRO Division of Entomology
G.P.O. Box 1700
CANBERRA ACT 2601

NEW 1985 COUNCILLORS

This Bulletin goes to press immediately prior to the Annual General Meeting in Hobart at which the following changes to the Office Bearers as listed on the cover are expected to be ratified:

Technical Editors

Dr I.D.Galloway (to replace R.Domrow)
Dr V.E.Harris (to replace B.H.Kay)

Regional Councillors

QLD: Mr C.G.Freebairn (to replace I.Galloway)
NSW: Dr P.C.Gregg (to replace R.Gunning)
Mr J.A.Macdonald (" M.Fletcher)
ACT: Mr D.McCorquodale (" P.Gullan)
VIC: Dr P.P.Stahle (to replace G.N.Berg)

P.B.Carne
Secretary

EXECUTIVE REPORT

Meetings

The Executive met on 11 February, 15 March and 10 April, 1985.

Membership

Since the last Executive Report, 7 applications for membership were received, 10 new members were elected, 2 were reinstated to membership, and 4 resigned. Total membership is now 655, the geographical distribution being:

QLD	152	VIC	77	TAS	24
NSW	145	SA	65	NT	15
ACT	104	WA	28	O'SEAS	45

We extend a warm welcome to the following new Members:

Elected 11 February

Mr S.P. Kim, CSIRO Division of Entomology, G.P.O. Box 1700, Canberra, ACT 2601. Kim is a taxonomic illustrator, and has interests particularly in Diptera.

Mr M.E. Sparks, 20 Betham Place, Kirrawee, NSW 2232. Michael is an Assistant Entomologist with the Grain Handling Authority of NSW, and has interests in stored product entomology and in the ecology of both forest and aquatic insects.

Mr J.A. Vranjic, 14 Kirkland Circuit, Macgregor, ACT 2615. John's interests lie in plant-insect interactions and taxonomy. He recently completed a BSc Honours degree.

Elected 15 March

Dr D.J. Bickel, c/- Dr D. McAlpine, Australian Museum, Sydney, NSW 2000. Daniel's interests lie in dipteran systematics, particularly the families Dolichopodidae and Empididae.

Mr M.J. Lewis, 30 Goodwin Street, Lyneham, ACT 2602. Milton is interested in Lepidoptera generally and the taxonomy of Coleoptera (Student Member).

Mr M.R. Newton, P.O. Box 751, Loxton, SA 5333. Mark is a Technical Officer in the SA Department of Agriculture and his interests include insect identification, pest control and integrated pest management.

Mr P.J. Vaughan, Department of Zoology, La Trobe University, Bundoora, VIC 3083. Patrick's interests are Psocoptera and Krakatau fauna.

Elected 10 April

Mr Y.F. Basset, School of Aust. Environmental Studies, Griffith University, Nathan, Qld 4111. Yves is a PhD student primarily interested in the partitioning of arthropod communities in trees (Student Member).

Mr S. O'Neill, Department of Entomology, University of Queensland, St. Lucia, Qld 4067. Scott is studying the biological control of weeds (Student Member).

Reinstatement to membership

Mr H.G. Greening (NSW)
Dr M.W. Mansell (Overseas)

Resignations

Mr W.H. Haseler (Qld)
Mr E. Highley (ACT)
Dr M.O. Ind (NSW)
Mrs C. Neilson (Qld)

UNFINANCIAL MEMBERS

As at 10 April, 23 members had not paid their 1984 subscriptions and will be liable to have their membership terminated if these fees are not paid before 1 January 1986.

OTHER ITEMS OF EXECUTIVE BUSINESS

Other items of general interest to members will be summarised in the Executive's Annual Report, to be tabled at the 16 AGM next month and published in the August News Bulletin.

MISSING MEMBERS

The current addresses of the following members are unknown. It would be appreciated if anyone knowing their present addresses would advise the Secretary.

Mr B.C. Dominiak (previously Guildford, NSW).

Mr K.J. Ferguson (previously Anglers'

Paradise, Qld).

Mr G.R.J. Forbes (previously Upper Mt Gravatt, Qld).

CHANGES OF ADDRESS OR TITLE

Please help us to address your Society publications correctly by promptly forwarding to the Secretary any changes to your title, name or address as it appears on your envelope address label.

The following are changes to the List of Members published in the News Bulletin Vol. 21 Part 1 (February 1985).

Mr P. Allbrook, 512 Nelson Road, Hobart TAS 7007 (previously TAS).

Dr P.G. Allsop (previously Mr).

Dr A.D. Austin, Department of Zoology, La Trobe University, Bundoora, VIC 3083 (previously O/SEAS).

Dr K.R. Brown, NSW Institute of Technology, School of Biological and Biomedical Sciences, P.O. Box 123, Broadway, NSW 2007 (previously NSW).

Prof. T.O. Browning, 7 Slape Crescent, Burnside, SA 5066 (previously Slope Crescent)

Mrs E.M. Butler, PMB 16, Warooka, SA 5077 (previously E.M. Shelton, of QLD).

Dr D.J. Campbell, Biology Dept., University of Wollongong, P.O. Box 1144, Wollongong, NSW 2500 (previously address unknown)

Dr C.J. Cilliers (previously Miss).

Dr J.A. Davis, School of Environment and Life Sciences, Murdoch University, Murdoch, WA 6180 (previously WA).

Dr D.W. DeLittle, APPM Forest Products, P.O. Box 63, Ridgley, TAS 7321 (previously TAS).

Dr H.A.C. & Mrs K.A. Fay, Entomology Branch, DPI, Meiers Road, Indooroopilly, Qld 4068 (previously NSW).

Mr D.H. Foley, Entomology Section, School of Public Health and Tropical Medicine, University of Sydney, Sydney, NSW 2006 (previously Qld).

Mr S. Frances, Army Malaria Res. Unit. RAAMC, MILPO Ingleburn, NSW 2714 (previously NSW).

Mr R. Gibson, c/- P.O. Port Keats, via Darwin, NT 5791 (previously NSW).

Mr T.A. Heard, Entomology Department, University of Queensland, St. Lucia, Qld 4067 (previously Qld).

Mr S.J. Hill, 2/72 Cliff Street, Glengowrie, SA 5044 (previously SA).

Mr D.G. Holdom, USDA-ARS Insect path. Res. Unit, Boyce Thompson Institute, Cornell University, Tower Road, Ithaca, N.Y. 14853 USA (previously Qld).

Dr M. Keerati-Kasikorn (previously Mr).

Mrs J. King, Entomology Department, University of Queensland, St Lucia, Qld 4067 (previously Qld).

Dr M.W. Mansell, National Insect Collection, Plant Protection Research Inst., Private Bag X134. Pretoria 0001. South Africa (reinstated).

Mr R. Mesibov, c/- Forestry Commission, P.O. Box 63, Smithton, TAS 7330 (previously TAS).

Mr L.A. Miller, School of Science and General Studies, Hobart Technical College, 75 Campbell Street, Hobart, TAS 7000 (previously TAS).

Dr W.A. Palmer, 2714 Pecan Drive, Temple, Texas, 76502. USA (previously O'SEAS).

Prof H.E.H. Paterson, Department of Entomology, University of Queensland, St Lucia, Qld 4067 (previously O'SEAS)

Mr R. Piper, 6 Mulindie Place, Edmonton, Qld 4869 (previously Qld)

Mrs S. Rondonuwu (previously mis-spelt Rononuwu).

Mr R.C. Russell, School of Public Health and Tropical Medicine, University of Sydney, NSW 2006 (previously NSW)

Miss E.M. Shelton; Now Mrs E.M. Butler (see above).

Mr E.S.C. Smith, P.O. Box 1701, Darwin, NT 5794 (previously WA).

Mr J.A. Sutherland, 22 Vicarage Lane, Ormskirk, L40 6HQ, England (previously PNG).

Miss M.A. Terras, "Carinya", Barrington via Gloucester, NSW 2422 (previously NSW)

Mr R.B. Tompkins, Horticultural Res. Inst. Knoxfield, VIC 3180 (previously VIC).

Mr S. Underwood, Australasian Butterfly Co., P.O. Box 330, Lane Cove, NSW 2066 (previously NSW).

OBITUARY

EDWARD FRANCIS AUSTIN JENSZ
December 30, 1920 - November 4, 1984.

E.F.A. (Ted) Jensz was born in Murtoa in Western Victoria and spent the first half of his life in that region. He worked for the Victorian Railways there, first in Kiata and later in Nhill. During the Second World War he served with the A.I.F. in the Middle East. Subsequently he left Western Victoria and joined International Harvesters at Dandenong, near Melbourne, finally retiring about 1977. He married twice, having a son David and a daughter Kaye from the first marriage and a daughter Marie from the second marriage. In 1979 he suffered a slight stroke and later accepted an offer to come to live with his married brother, Les, in Wynnum, a bayside suburb of Brisbane.

Ted Jensz had two powerful interests - the Scouting Movement and natural history. His involvement with Scouting extended over many years as a Leader and he amassed a substantial collection of Scouting memorabilia. His interests in natural history found many outlets in Scouting and he guided a vast number of young people into an appreciation of the bush.

His principal interest in natural history was in insects, a direction initiated and encouraged by his early association with Keith Hateley, the well-known field naturalist of western Victoria. During the 1950's Mr Jensz began to seriously build up an insect collection and he continued to do so right up to his death. He had little personal contact with other entomologists but pursued a vigorous correspondence seeking exchange of specimens. He also regularly sent batches of specimens mostly beetles, to the (then) National Museum of Victoria for identification where they were dealt with by the entomologist of the time, A.N. Burns. His collection finally comprised about 50 cabinet drawers and 40 store boxes with coverage being mostly Coleoptera and Lepidoptera with a few cicadas. About half the collection were exotic species.

He was a long-time member of the Entomological Society of Australia (N.S.W.) and later of the Entomological Section of the Royal Zoological Society of N.S.W.

In late October 1984, Mr Jensz decided to visit a long time scouting correspondent in Houston, Texas. An added attraction was the anticipation of meeting a neighbour of the correspondent who was an insect collector. The trip proved tragic and he died on November 4, a few days after arriving in Houston. His collection has now been lodged in the Queensland Museum.

(Geoff Monteith)

RETIREMENT OF TAXONOMIC EDITOR

BOB DOMROW RETIRES AS TAXONOMIC EDITOR AFTER 10 YEARS

It is not often that the Executive is moved to so publicly express its appreciation of the services of a member of our Society, but no instance can be more appropriate than for Dr Bob Domrow. In May of this year Bob will have completed 10 years as the technical Editor responsible for taxonomic and technical papers submitted for publication in the Journal of the Australian Entomological Society and he has indicated his intention to retire at that point.

During Bob's term as taxonomic Editor we estimate that some 305 papers passed through his hands. He inherited the position from Dr Tom Woodward who had established standards of presentation which assisted our journal to attain international standing. Perusal of back copies will show that Bob maintained these standards and matured them so that a recent international review of entomological journals placed J. Aust. ent. Soc. amongst the top 10 of its kind.

The initial task of a technical editor is to assess each manuscript and in particular to recognise those which, although superficially not appropriate, have the potential to be made so. No editor we have had possessed this ability in greater measure than Bob. Of course he drew occasional criticism from some authors who were reluctant to recognise his editing as an improvement to their paper. This is the lot of any editor and Bob was always more than willing to discuss any point in contention. However, the breadth of both his classical and his technical scholarly knowledge meant that his editing invariably improved the accuracy, readability and polish of any paper.

Whilst I am sure that we will find a worthy successor to Bob we hope he will continue to assist us in a less formal capacity. For the present he carries away the best wishes of the Executive and other editors and those of our predecessors for his marathon effort.

Neil Heather
Chief Editor

RESEARCH REQUEST

AUSTRALIAN WATER BUGS, ESPECIALLY FROM FARM DAMS

Waterbugs from all localities in Australia are required for research and revisionary studies. The following families are especially needed:

Naucoridae
Hebridae
Notonectidae
Hydrometridae
Pleidae
Corixidae
Mesoveliidae

Specimens are particularly wanted from Farm Dams. Any information on dams i.e. approximate age, size, type of vegetation; can be characterized as submerged floating or emergent macrophytes, if plant names available with distribution in dam this would be invaluable. Substrate (bottom) if sandy, gravel, silt or stony should be noted. Precise locality important giving location, altitude, date of collection. Material is quite acceptable in alcohol. All material will be returned to collector or deposited in an Australian Museum/Institute of donor's choice. Please write direct to:

I. Lansbury
Hope Entomological Collections
University Museum
Oxford U.K.

REGIONAL NEWS

AUSTRALIAN CAPITAL TERRITORY

Richard Dallwitz left Canberra at the end of January to begin a two-year posting as Officer-in-Charge of the screw-worm fly project at Laloki, PNG. Phil Spradbery, who has been in charge of the project since 1973, is now based in Canberra.

There have been several visitors to the Division who have given talks. These include John Thomson, of the Genetics Department, Sydney University, who, with the assistance of Max Whitten, discussed the relevance of molecular biology to ecology and behaviour and, in the process, generated a considerable amount of debate. Paul Wellings, of the Division's Warrawee Centre in Sydney, gave a talk on "Sex regulation in aphid parasites" and Paul Roberts, a professor of zoology at Oregon State University and currently a visiting research worker in the Division talked about "Chromosome structure and activity in problems of development and aging in Drosophila". Peter Kenmore, an FAO consultant in the Philippines, talked about the problems of implementing a rational control strategy in a developing country.

The ANIC taxonomists farwelled Mark Harvey at the end of February. Mark has been working at the ANIC on pseudoscorpions and other poorly known arachnids with finance from an Australian Biological Resources Study grant from the Bureau of Flora and Fauna. He has moved to the Museum of Victoria to commence the enormous task of unravelling the taxonomy of water mites, again on an ABRS grant.

There have been only three collecting trips for the ANIC in the last three months. Ted Edwards made a trip to Iron Range in Queensland during February accompanied by Bart Hacobian of Sydney. They collected lots of Lepidoptera including many new species. John Lawrence spent two weeks at the end of March and beginning of April in the rain at Lamington National Park and Tamborine, where he collected some interesting species, especially tenebrionids that resemble ladybirds and run around at night on lichen-covered rocks. Marianne Horak left Australia at the beginning of March to participate in Project Wallace - the Royal Entomological Society and Indonesian Institute of Science's commemorative expedition to north Sulawesi (Celebes). She is collecting soil samples (berlesates) and Tortricidae. The latter will be valuable for taxonomic work on the Australian Tortricidae because the Australian fauna has a large oriental element.

Aquatic insects have received some attention at the ANIC in recent months. Frances Michaelis of the Australian National Parks and Wildlife Service is a regular visitor; Gunther Theischiger from Sydney, who is working on Odonata and Plecoptera, including an illustrated guide to the Australian Plecoptera, visited the ANIC and had discussions with Frances Michaelis, Jo Cardale and Tony Watson; Mr Ivor Lansbury from the University Museum, Oxford, UK, presented his collection of aquatic Heteroptera to the ANIC and arrived in Canberra in early February to spend two months incorporating his material into the ANIC. The collection consisted of about 50,000 specimens, including more than 850 named species from all over the world.

Alan Andersen from the Botany Department at Melbourne University spent two days in early February identifying wasps (mostly reared from galls), ants and other insects. George Bornemissza from Tasmania visited the ANIC for two weeks in early February to borrow Coleoptera for a public display. Prof Emeritus Woodrow Middlekauff from the University of California in Berkeley, USA, spent about a week in Canberra pursuing his interests in sawflies and tabanids. John Moss from Sydney visited the ANIC in late February to look at cicadas.

Andrew and Chris Beattie from Northwestern University in Illinois, USA, who have been working at the University of Melbourne, visited Bob Taylor and the Division's chemists in late February to further collaborative research on the chemistry of the metapleural gland secretion of bulldog ants (Myrmecia). These glands, which are found in almost all ants, produce antibiotic material that has a sanitary function. Plant pollen is killed by this secretion and therefore ants are poor pollinators. Two other visitors with strong interests in ants were Ross Crozier from the University of New South Wales and his Ph.D. student Michael Crosland, who were collecting bulldog ants for population genetical studies. They were accompanied by Dr Penny Kukuk from the Department of Entomology, Cornell Univeristy, USA, who works on bees, especially halictid bee behaviour, and is interested in macrocephalic phenomena in Hymenoptera.

The Lepidoptera section of the ANIC scored the most visitors of late. Peter McQuillan from the Department of Agriculture in Hobart gave a talk to the Taxonomy Group on alpine moth faunas and spent a few days esamining ennomine Geometridae among other things. Dr Colin Welch from Monks Wood Experimental Station, Abbots Ripton, UK, gave a divisional seminar in late February on the insect fauna associated with introduced *Nothofagus* in the UK; he spent some time discussing insects on *Nothofagus* with Ebbe Nielsen. Mr Roland Johansson from Våxjö in Sweden was at the ANIC in late March to collaborate with Ebbe on a manuscript on the Nepticulidae. Ian Common from Toowoomba in Queensland returned for two weeks in late March to organize illustrations for a major project on Australian moths and to continue his work on the checklist of the Australian Oecophoridae. Dr O. Høegh-Guldberg from the Natural History Museum in Aarhus in Denmark visited the ANIC on April 10 to look at the collections

CSIRO Division of Forest Research

Cliff Ohmart presented a seminar to the Division of Entomology in CSIRO in early April on his research on the effects of nitrogen concentration in the foliage of *Eucalyptus blakelyi* on larval growth and fecundity in *Paropsis atomaria*.

Australian National Parks and Wildlife Service

The ANPWS postal survey on endangered invertebrates went to all entomologists listed on the AES directory last October 1984. At least 50 replies were received and all contributors are thanked for their input. It is still not too late to reply. A full report will be prepared by the ANPWS and preliminary results will be presented to the AES conference in Hobart by Frances Michaelis and Lionel Hill.

Australian National University - Department of Neurobiology, Research School of Biological Sciences

Dr Stan Caveney from the University of Western Ontario, Canada, was a visitor to RSBS from December 1984 to early February 1985. He was researching dung beetle optics in collaboration with Dr Peter McIntyre from the Department of Mathematics at Duntroon College and Keith Houston from the Bureau of Flora and Fauna.

Prof Adrian Horridge wishes to undertake research on fireflies (Lampyridae) and would be pleased to hear from anyone who could provide a regular supply of these beetles.

Australian National University - Department of Zoology

Dr Stimson Wilcox from the State University of New York at Binghamton, USA, arrived in Canberra last December to spend six months as a Visiting Fellow studying the behavioural ecology of water striders. He has given seminars in the Zoology Department and in CSIRO Division of Entomology, plus he has made an excursion north for field work in Queensland.

Milton Lewis has begun an Honours project on the systematics and biology of *Apina callisto* (Lepidoptera : Agaristidae), which is abundant in Canberra this year.

Penny Gullan and Barry Longstaff
Regional Councillors

NEW SOUTH WALES

NEW SOUTH WALES - COUNTRY NEWS

Geoff Williams, at Taree, reports a few visitors this season. Peter Kelly called in after travelling up from Melbourne via Warrumbungles, Pillaga Scrub and Armidale in search of Chrysomelidae; he found collecting quite poor. Norman Rodd visited on his way to Rockhampton and was taken to one of the littoral rainforests at Harrington in search of Hymenoptera, particularly bees - but it was a case of "you should have come the month after".

A National Conference on Bitou Bush, *Chrysanthemoides monilifera*, was held at Port Macquarie in August 1984. Stefan Neser, Plant Protection Res. Inst., Pretoria, South Africa, delivered the keynote paper "Preliminary observations on natural enemies of Bitou Bush in South Africa". The conference was arranged by the NSW National Parks and Wildlife Service to highlight the impact, invasive nature and biology of this serious introduced weed. The conference concluded with recommendations being put, as motions, for presentation to the next CONCOM meeting for funding for a Bitou Bush biological control programme.

Dr Roman Sawicki of the Rothamsted Experimental Station, UK visited Robin Gunning at Tamworth and Neil Forrester, Angus Wilson and Garry Fitt at Narrabri in early February to discuss and advise on research into pyrethroid resistance in *Heliothis armigera*.

Christine Stone, formerly entomologist at the Agricultural Research Institute, Yanco has joined the Wood Technology and Forest Research Division of the Forestry Commission of New South Wales as a Forest entomologist.

Graham Thwaite, Entomologist, Agricultural and Veterinary Research Institute, Orange, attended the official opening of Agresearch Services new head office and laboratory complex at Orange in April. Agresearch conducts screening trails for the agricultural chemical industry on a contract basis and now has a staff of nearly 20 in four Australian states. One the company's directors, Martin Collett, was elected to the Society late last year.

CORRECTION

It was mistakenly reported in the last issue of the News Bulletin that Tom White of the Riverina College of Advanced Education, has taken up an appointment at the University of New England. Tom is in fact on six months sabbatical leave at the University of New England, he returns to his job as Dean of Applied Science at Riverina in July.

Robin Gunning
Regional Councillor

VICTORIA

Museum of Victoria

Professor David Cook, from the Zoology Department, Wayne Station, University of Michigan, spent 4 weeks at the Museum in April. His visit, which was funded by ABRS was to assist with the taxonomy of Australian water mites. He worked with Mark Harvey who has a ABRS appointment at the Museum. Whilst in Victoria Professor Cook conducted a 2 day workshop at Monash University on the identification of Australian water mites to the generic level.

Deakin University, Geelong

A small scale microwave unit for disinfesting grain was demonstrated to Grain Elevator Board and Australian Wheat Board personnal in March, by Dr V.N. Tran. Dr Tran has developed the unit in collaboration with Peter Williams of PRI, Burnely.

Plant Research Institute, Burnely

Ted Wilson and Bill Barnett, Fruit crop Integrated Pest Management specialists with the Co-operative Extension Service, University of California visited PRI during January and spent time in the field with David Williams, before travelling to Canberra.

Harold Madsen, who recently retired from his position with Canada Agriculture visited David Williams and John MacFarlane to discuss IPM in tree fruits in February. Harold also managed to talk Dave Morris into a fishing trip!

Ben Oldroyd spent a week in New Zealand in November, where he visited various locations including the MAF Research Station, and DSIR Entomology Division, Auckland. The trip, which was funded by the Honey Research Committee, allowed Ben to familiarize himself with the chalkbrood disease of bees, and other subjects ranging from kiwi fruit pollination, bumble and leaf cutter bees to European wasps.

Mark Smith visited Phil Michaels and Mike Grimm of the WA Department of Agriculture in Perth, in April to discuss common fields of work on the ecology and control of armyworms, particularly with reference to their native and exotic parasitoids. Marks is interested in the introduction of some of the exotic parasites available in WA to the eastern states.

Rob East visited SA in March to discuss the European wasp situation in the Adelaide Hills with Paul Madge, and fruit fly work with Peter Mobbs at the Fruit Fly Eradication Unit in Adelaide.

Bruce Tomkins left Burnley in March to take up another position in the Department at the Horticultural Research Institute at Knoxfield. He will be working on the post-harvest physiology of vegetables.

Vivienne Chung has recently moved to

Burnley from the Department's Head Office. She has taken up the position of Computer Systems Officer and will be involved with the Crop Information Service and general computing work.

During March the Burnley Gardens complex was the location of this years "Garden Week" sponsored by the Victorian Nurseryman's Association. PRI's involvement consisted of various displays and seminars depicting the work of the Institute.

Gordon Berg
Regional Councillor

NORTHERN TERRITORY

Entomology Branch, N.T. Health Department

Peter Liehne has now completed his two year investigation of the biting insects at Palmerston, in consultation with the Entomology Branch, and is returning to Perth via the eastern States to visit friends.

The Branch has been in the throes of a progressive mosquito awareness campaign during March and April, visiting the major population centres with localized display material on various aspects of mosquitoes.

Two new members of the Branch are Andrew Hancock and Stuart Smith. Andrew, who replaces Andrew Masters as technical assistant, is a graduate of U.W.A. and has been managing a small beef property in SA before helping out with Peter Liehne. Stuart is the new technical officer, and has come over from CSIRO Kununurra, making the change from agricultural insects to medical insects.

Geoff Davis and Andrew Hancock have just returned from a mosquito survey along the Sandover Highway near Alice Springs, and returned to Darwin with a new gearbox. Peter Whelan has investigated a skin lesion problem at Pepimenarti south west of Darwin, and with the help of Tom Weir, has found that the rove beetle Paederus australis was the offender. The skin lesions have been confirmed by demonstration on himself, and Wendy Kelton (a volunteer).

DPP Entomology Section

Dr Richard Soper of the Boyce Thompson Institute, Ithaca, New York and David Holdom who has recently completed a Ph.D. at the University of Queensland visited for a few days in March. They collected hoppers from Ian Cook's rice plots in search of pathogens of the insects, and took culture material to the Institute for further study.

DPP Weeds Section

Dr Rainer Hasse of the University of Gottingen, Germany, who has been studying the ecology of flood plains in Bolivia visited the Top End and was shown the local examples by Mark Lonsdale and Colin Wilson.

Colin also reports first releases in the Territory of two weed biocontrol agents. The tortricid Epiblema strenuana was liberated on Noogoora Burr in December, and field recoveries were made in January and February. The weevil Neohydronomus pulchellus was released on water lettuce (Pistia stratiotes) in February but recovery had not been attempted up to mid-April.

DPP Agricultural Quarantine Service

In March, five Indonesian fishing vessels found themselves unexpectedly in Darwin Harbour, having been apprehended in Australian territorial waters. The boats, traditionally built wooden prahus from south-east Sulawesi, were liberally festooned with drying shark fins which were highly attractive to blowflies. Of particular quarantine interest was the discovery, in deckhouse timbers of one of the vessels, of a thriving colony of a Parrhinotermes species. This was identified by Lee Miller of CSIRO as different from the sole Australian representative of the genus, which inhabitats rotting logs in North Queensland rainforests. Colleagues, however, were less interested in this find than in moving briskly upwind to a fair distance from those of us who had been crawling around in the bowels of these vessels!

Ted Fenner
Regional Councillor

QUEENSLAND

CSIRO Division of Entomology

Bernie Stone has received a 3-year NHMRC grant for research on tick allergies in humans, especially those due to *Ixodes holocyclus*. An immunologist will be appointed to work on the project.

Bernard Doube, from the Dung Beetle Unit in Pretoria spent a week in Brisbane in late April. Gus Macqueen came down from Rockhampton for talks on the co-operative research on the Buffalo Fly in Australia and its equivalent species in Africa.

Griffith University

A recent arrival is Yves Bassett a Ph.D. student who will be working on rainforest insects. Yves has completed an M.Sc. in forestry entomology from Neuchatel, Switzerland.

An exhausted but exhilarated Roger Kitching has recently returned from 2 months in Sulawesi with Project Wallace. During his stay in Sulawesi Roger studied food webs in tree holes, bamboo stumps and *Nepenthes* pitchers. One of Roger's students, Bert Orr, is currently in Sulawesi studying papilionid butterflies.

Dr Jennifer Owen, a butterfly biologist associated with the University of Leicester was a recent visitor in the Department.

Alan Fletcher Research Station

Rachel McFadyen will be leaving on 28th April for a 6 week trip to Madagascar and Kenya. Whilst in Madagascar, Rachel will be collecting insects on rubber vine and in Kenya her attentions will be turned to insects on prickly acacia.

Marie Albin, a graduate of Queensland Univeristy, has been appointed as an entomologist to the A.P. Dodd Tropical Weeds Research Centre at Charters Towers. This brand new biocontrol facility will be opened on the 17th April.

On the 31st July, Bill Haseler retires as Director of the Biological Branch of Lands Department. Bill began his career as an entomologist, with a B.Sc. from the University of Queensland in 1957 and followed this with an M.Sc. in 1964. In 1958 he was appointed Investigating Officer in the Biological Section of Department of Lands and become Director of this section (now Biological Branch) in 1970. Bill has been an active member of a number of societies. He is a foundation member of both the Australian Entomological Society and the Weeds Society of Queensland and has served as the President (1964) of the Entomological Society of Queensland and was the inaugural President (1976-1978) of the Council of Australian Weed Societies. Bill's contribution to weed science was acknowledged with the awarding of the Australian Weed Societies' Medal. Bill is planning to retire to a small farm at Mt Tamborine where he hopes to experiment with growing exotic fruits and nuts. The Society extends to Bill our best wishes for a happy and fulfilling retirement.

Imminent retiree - William H. Haseler, Director of Queensland's Alan Fletcher Research Station, 1970 - 1985.

Forestry Department

Dr David Morgan of the Waite Institute, South Australia, visited recently to inspect progress on the Ips biological control programme and attend the release of further biocontrol agent Temnochila virescens Fabricius, a predatory trogossitid beetle. This brings to four the battery of biocontrol agents now released. The previous three were a clerid beetle and a braconid and torymid wasp. Establishment of the torymid has now been confirmed.

In New Bulletin Volume 20 part 1 it was reported that Brenton Peters had relinquished his role as officer-in-charge of the West Indian dry wood termite programme. Though Brenton is currently very involved with Forest Products' research he has, however, retained control of this project.

Michael Hockey and Murdoch DeBaar recently had the excitement of confirming the existence of a breeding population of the large, rare and beautiful hepialid moth, Zelotypia staceyi, at the site in the Dividing Range west of Brisbane where Judy Grimshaw collected an adult a year or so ago. It is suggested the precise locality should remain confidential.

Queensland Museum

Dr Stim Wilcox from New York State and currently spending sabbatical at ANU, visited in late March in search of the gerrid water-strider, Rhagadotarsus. His previous work in 1971 on this species revealed a method of communication whereby the males "call" females by means of pulses of surface ripples. Armed with a portable microcomputer and the ability to mimic the gerrid's call signals he was anxious to find a tame field population to torment. Geoff Monteith took him to Stradbroke Island from which museum records of the species were available. However, they proved elusive and a quick flight to Cairns took Stim to a good population of Rhagadotarsus on the Barron River (and two cyclones!)

Another aquatic hemipterist in Brisbane was Ivor Lansbury, from the Hope Museum at Oxford, who wound up a visit to Australia with a week in Brisbane before flying back to Britain on April 12. While in Brisbane he renewed acquaintance with fellow hemipterists Tom Woodward, Tony Ewart and Geoff Monteith and joined Geoff on an Easter camp of the Queensland Naturalist's Club near Stanthorpe.

Geoff Thompson visited Dalby in February and March to service pitfall traps being maintained there as part of a Bicentennial Project by local naturalist groups to survey the Lake Broadwater Environmental Park.

Val Davies departed for a month in London in late March where she hopes to spend a little time at the British Museum (when not occupied with her brand new first grandchild).

Chris Nadolny, of University of New England, visited in early April for discussions in connection with the report he is preparing on the conservation status of invertebrates in NSW rainforests.

In late February the Museum took delivery of the insect collection, principally Lepidoptera and Coleoptera, of the late Mr E.F.A. Jensz whose Obituary appears elsewhere in this Bulletin.

Department of Primary Industries

Harry Fay has joined the Entomology Branch, taking the position vacated recently by Eric Sinclair. Harry is a graduate of Sydney University and has worked previously with the CSIRO Dung Beetle Unit in Pretoria and with the IAEA in Vienna. After a short period in Brisbane he transfers to duty at the Mareeba lab.

Dr John Ismay of the Department of Primary Industry of Papua New Guinea visited the Indooroopilly laboratories to have discussions with Entomology Branch officers. John conferred with Dick Drew regarding the past and continued trapping of fruit flies in PNG and discussed virus diseases in dynastids with Bob Teakle. John bought specimens of New Guinea tachinids for Bryan Cantrell to examine and spent a day examining and sorting the DPI chloropid collection. John accompanied Bryan Cantrell on a days collecting at Mt Glorious.

Ivor Lansbury called in briefly at DPI to examine the collection of aquatic Hemiptera.

Dr Roman Sawicki, authority on insecticide resistance, visited DPI in March to discuss pyrethroid resistance in Heliothis and delivered a stimulating seminar on the relationship between the level of resistance to pyrethroids, control failure in the field and the frequency of the knockdown resistance gene.

Congratulations to Peter Allsopp of Toowoomba, DPI who was recently awarded the degree of Doctor of Philosophy from Griffith University. Peter's thesis was entitled "The biology and ecology of the false wireworm Pterohelaeus darlingensis (Coleoptera : Tenebrionidae) with some comparisons with P. alternatus.

During March, Graham White spent two weeks in Narrabri as part of a co-operative project with the New South Wales Department of Agriculture examining the economics of farm grain storage. Graham was involved in sampling grain and relating this to pest control measures.

University of Queensland

Professor Hugh Paterson has returned to Australia from the University of Witwatersrand to take up the Chair of Entomology of the Entomology Department vacated by Doug Kettle. Once established, he hopes to initiate a programme of research relating to population genetics of insect pests and species problems in insect pests. From 21-23 May Professor Paterson will be attending the symposium "Whats a species" and the conference of the Entomological Society of New Zealand in Auckland where he will present an overview on the symposium topic. Immediately following this symposium and conference he will also be attending the conference of the Australian Entomological Society in Hobart.

The Entomology Department will be well represented at the Hobart Conference. President Elizabeth Exley will of course be there, as will Viv Harris, Margaret Schneider, David Yeates, Greg Daniels, Chris Freebairn and Graham Hamilton.

Myron Zalucki will be attending the 4th Australian Conference on Grassland Invertebrate Ecology in New Zealand in May and with Les Robertson, who left the Department to return to New Zealand last year, will present papers on studies of soldier fly population dynamics.

Congratulations to Les Robertson who was admitted to the degree of Doctor of Philosophy in January of this year, for his thesis entitled "Effects of natural enemies on population dynamics of Inopus rubriceps (Macquart) (Diptera : Stratiomyidae).

Brad Scholtz has completed his work for a Diploma in Agricultural Studies and is now working in Canberra.

Congratulations are extended to three other members on obtaining higher degrees: David Holdom (Ph.D.) for his work on Entomophthora planchoniana a fungal pathogen of the blue green aphid; Maureen Peart (M.Sc.) for a thesis entitled "Studies of Coleoptera and Hemiptera in two plant communities in south-east Queensland"; Des Foley (M.Sc.) for his thesis entitled "A study of laboratory adaptations in the potato moth, Phthorimaea operculella (Zeller)". Des is now working in Sydney with Joan Bryan at the Commonwealth Institute of Health.

1985 is the University of Queensland's 75th Anniversary and as the Entomology Department's contribution to the celebration Max Whitten, Chief of CSIRO Division of Entomology, Canberra, gave an invited lecture on "the Role of Molecular Biology in Entomology" at the University on May 9.

Ian Galloway
Regional Councillor

NORTH QUEENSLAND NEWS

Roman Sawicki from Rothampstead Experimental Station near London was in north Queensland to discuss the local pyrethroid resistance problem in Heliothis.

Travis Glare from the Department of Entomology, University of Queensland visited Mareeba collecting pathogens, especially those of Heliothis. Jamie Seymour from the James Cook University in Townsville was collecting the Heliothis parasite Microplites.

Harry Fay, Dick Drew, Alan Allwood and Vijay (Malaysia) visited the north for a week testing new fruit fly attractants. Harry spent a day at the DPI in Mareeba looking at various insect problems in the area.

Allan Walford-Huggins
Regional Councillor

SOUTH AUSTRALIA

South Australian Museum

A recent visitor to the museum was Dr Scott Shaw, from Harvard University. Dr Shaw spent some time looking at the braconid collection.

The 4th volume of the Guide to Beetles of South Australia by Eric Matthews is in an advanced stage of printing, and should be available in a few weeks.

It was very pleasing to see an entomologist mentioned in the New Year's Honours List. Dr Joseph J.H. Szent-Ivany was awarded the A.M. for service to science in the field of entomology in Australian and the South Pacific. Dr Szent-Ivany, A.M., Ph.D., Dip. Econ. & Pol. Sc., F.R.E.S., M.A.I.A.S., is an expert on the Lepidoptera and has been an honorary associate of the SA Museum for many years. Originally from Hungary, he has worked in Papua New Guinea as well as South Australia, and has been a member of the prestigious Pacific Science Association since the 1960's.

Berryl Morris, Information Officer at the Museum, is continuing to make important contributions to the field of forensic science. Beryl is studying (as an external student) for a Masters degree at the Waite Agricultural Research Institute, and her studies involve the estimation of the time of death of homicide or suicide victims, etc. from the extent of development of blowfly larvae which are often associated with the body. This information can be particularly valuable when a victim has been dead for several days, when conventional methods of timing death become less reliable. Beryl has recently been called as a witness in several murder trials in SA, including the Kelvin case, where she was able to provide a very useful estimate to the time of death, and during the trial the Judge told the Jury that "Morris's estimate was much more accurate than that of medical or other scientific witnesses". Beryl's real triumph came in a more recent case when her methods gave her an estimate of time of death of the victims as being early evening on a particular day. The forensic pathologist disagreed, giving his estimate as two days later. This difference of opinion was resolved when the police obtained a confession, and the stated time of death was within one hour of Beryl's estimate!

University of Adelaide, Zoology Department

Alice Wells is preparing to join the continuing Project Wallace expedition to North Sulawesi (Celebes) and will concentrate on collecting micro caddis flies of the family Hydroptilidae.

CSIRO Division of Soils

John Greenslade is at present carrying out an ant survey in the Tanami Desert (NW of Alice Springs).

Barry Hudson has returned from the University of Exeter, where he has been studying the activities of small invertebrates in "microcosms".

Department of Agriculture

John Lewis has started work with the Department, working on pests of medic pastures. John is a graduate of the Waite, and has spent the previous five years as an entomologist with the South African Sugar Association, working on the sugar cane borer.

Professor Hepburn from the University of Witwatersrand (South Africa) visited the Department recently.

Paul Madge has found the first outbreak of European Red Mite in South Australia.

Peter Allen visited the Victorian Plant Research Institute recently. He and Terry Amos carried out some sampling at the St. Kilda Road field station.

Waite Institute - Department of Entomology

Dudley Pinnock has been appointed the Waite Professor of Entomology. An informal gathering of the Department was held a few weeks ago to celebrate the announcement and to offer congratulations to Professor Pinnock.

Mr Geoff Allen has recently joined the Department to commence studies for a Ph.D. Geoff formerly worked with Tony Sweeney's malaria research unit at Ingleburn.

Duncan McKay left, after an extended visit, to take up a temporary position at Flinders University.

Dr Kerrie Davies has been appointed as a temporary lecturer in the Department and will assist in teaching during the first two terms.

Yugal Prasad has submitted his thesis entitled "On the efficiency of Rodolia cardinalis (Muls.), and its response to prey patches". Prasad has returned to India, and is considering the offer of a Postdoctoral position at Wageningen.

Another prospective student, Miss Akala Paripurna, from India, is expected to join the Department later in the year.

David Cooper
Regional Councillor

WESTERN AUSTRALIA

CSIRO Division of Entomology

Bernie Doube of the South African dung beetle group spent a day in Perth in early April as part of his Australian tour. He discussed dung beetles and fly control with colleagues in the Division.

WA Department of Agriculture

Bill Woods returned to Perth from Texas for 3 months. He goes back in May to continue his search for biological control agents for the weed *Parkinsonia aculeata* and to do follow up research on some potentially useful insects.

Nick Monzu is engaged in preparation of a bulletin to appear in July this year which will deal with the blowfly problem in 1985. The bulletin is being designed for farmers and is to be promoted by Departmental field officers in preparation for commencing a new system of forecasting body-strike in 1986.

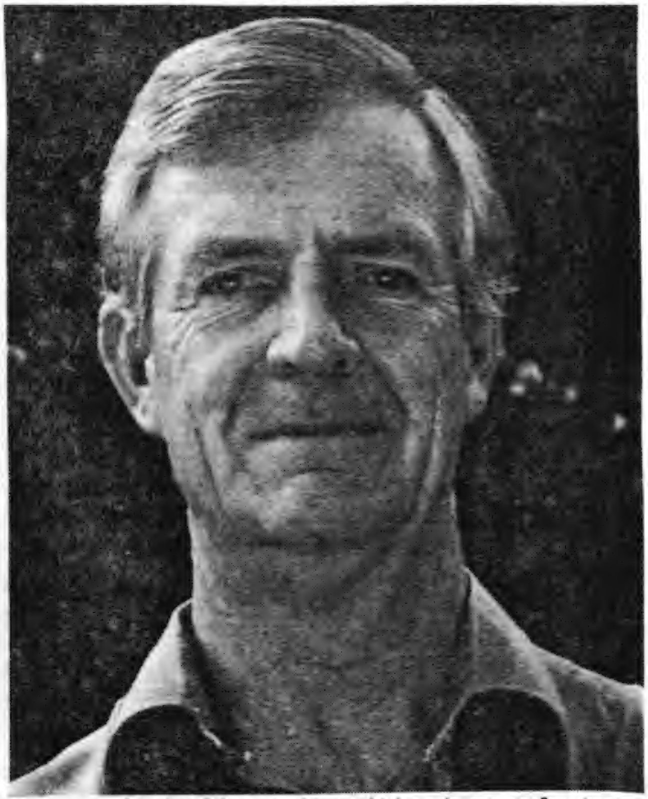
Steve Curry reports that the outbreak of leaf skeletonizer, *Uraba lugens* (Lepidoptera : Nolidae), first reported from two areas of the South-West in the summer of 1983, continues. About 20,000 hectares of jarrah and marri (but not karri) forest north of Walpole and Manjimup have been affected.

WA Museum

Mr Dan Sumlin III of San Antonio, Texas, paid a brief visit to the Museum on March 27 prior to setting off on a collecting trip into northern areas of the State. Dan specializes in tiger beetles (Cicindelinae) and was particularly hoping to find the elusive genus *Nickerlea* during his travels.

Terry Houston
Regional Councillor

THE NEW PROFESSORS OF ENTOMOLOGY



Australian universities have only two autonomous Departments of Entomology, one at the University of Queensland and the other at the Waite Institute of the University of Adelaide. Following the retirements of both previous Professors the two Departments have both successfully weathered internal reviews by their Universities. Coincidentally, both vacant Chairs of Entomology have been filled during the last two months. The new incumbents are Professof Hugh Paterson at the University of Queensland (left) and Professor Dudley Pinnock at the Waite Institute (right). Congratulations to both.

OVERSEAS NEWS

PAPUA NEW GUINEA

CSIRO Screw Worm Fly Unit

The unit has recently completed a mass rearing trial in which they compared a new concept of continuous rearing in vats with the method previously used. The results gave a 95-113% increase in larval production and 100% increase in the numbers of larvae produced per quantity of food (a liquid diet of blood, milk and egg). During the trial 2.3 tonnes of dried blood powder was used to produce 1/3 tonnes of larvae and 1/4 tonnes of pupae.

Two new members of staff have joined the unit - David Holt arrived in November of last year and Richard Dallwitz arrived more recently to replace Philip Spradbery who finally leaves in mid-May!

University of Papua New Guinea

While on leave in January, Elaine Brough visited the DPI station at Nambour to talk over citrus pest problems with Dan Smith. Several of the problem insects found in North Queensland (e.g. citrus leaf miner) also occur in PNG and the possibility of investigating the use of biological control agents found in PNG but not present in Queensland, was discussed. Elaine also visited Ted Dahms and Rudi Kohout at the Queensland Musuem and looked at the eurytomid collection there.

Department of Primary Industry

John Sutherland "went finish" from the Bubia Research Station (near Lae) and returned to Britain in February. We wish him and his family all the best for the future.

From the Highlands Agriculture Experiment Station Brian Thistleton reports that he attended the International Workshop on Diamond Back Moth Management in March. Unfortunately there appears to be no sign, as yet, of a biological control agent that could be used in the lowlands of PNG where the moth is a serious problem to cabbage growers. Brian is now the Acting Team Leader for the Highlands Food Crop Team and is busy co-ordinating the establishment of a multidisplinary group which will be composed of an agronomist, economist, entomologist, pathologist, plant breeder and plant nutritionalist. The members of the team will work closely together, their main aim being crop improvement for the village people.

Elaine Brough
PNG Correspondent

NEW ZEALAND

NEWS FROM NEW ZEALAND

A new branch of the Entomological Society of New Zealand has started with 13 members in Hawkes Bay. The branch has a brief to foster entomology in the distinct with a first objective of producing a comprehensive checklist of arthropods in the province. Much of this work has already been completed by the efforts of long time amateur Entomologist Tom Davies who is also the inaugural President of the branch.

Levin Horticultural Research Centre recently held an open day which attracted over 18,000 visitors. Some of the exhibits were of an entomological nature including one on pollination research with bees. This same exhibit was also recently exhibited in the "Beehive" the colloquial name for the "Beehive" shaped House of Representatives.

John Tenquist
New Zealand Correspondent

NEWS FROM AFFILIATED SOCIETIES

ENTOMOLOGICAL SOC. OF VICTORIA

The Society's recent meetings have included talks on the 'European Wasp problem' by Ross Field and 'Impressions of New Guinea Lepidoptera' by Tim New.

The Zoo Le Souef Memorial Award for 1984-85 was awarded to Mr Geoff Williams of Taree, NSW, in appreciation of his work on biology of beetles and insect conservation. Nominations for the next award are now being sought, and should be sent to the Hon. Sec. (Dr Tim New, Zoology Department, La Trobe University, Bundoora, Vic 3083) in time for consideration in early November 1985.

Peter Carwadine
Representative Councillor

ENTOMOLOGICAL SOCIETY OF NEW SOUTH WALES

The 32nd Annual General Meeting of the Society was held on 3rd April with the following elected to office:

President	Max Moulds
Vice President	Don Scambler
Secretary	Doug Rugg
Treasurer	Ted Taylor
Business Manager	Alan Clift
Editor	Courtenay Smithers
Circular Editor	Murray Fletcher
Council Members	John McDonald Dinah Hales David Sinclair Mark Stevens.

An average yearly attendance at meetings of 21 was pleasing.

"The Insect Who's Who", an audiovisual resource kit for Secondary Schools produced by the Society has already returned over $300 royalties.

Volume 17 of the Society's journal General and Applied Entomology is now well under way. Some space remains for additional papers if submitted within the next few months. Publication is expected about September so here is a chance for quick publication. Volume 17 will be dedicated to the late Professor V.V. Hickman.

A BOOK FAIR is planned (see separate details this bulletin) for Wednesday evening 3rd July. If you cannot attend send your wants list (together with maximum price you are prepared to pay) to Max Moulds. He will endeavour to secure items on behalf of interstate and country members and post them to you.

Max Moulds
Representative Councillor

ENTOMOLOGICAL SOCIETY OF QUEENSLAND

Activities for 1985 commenced with the Annual General Meeting held on 11th March at the University of Queensland. The following office bearers for 1985 were appointed:

President	Mr Bryan Cantrell
Senior Vice President	Ms Marlene Elson-Harris
Junior Vice President	Miss M. Schneider
Honorary Secretary	Mr Greg Daniels
Honorary Treasurer	Dr Rachel McFadyen
Publication Committee Convenor	Dr Wendy Forno
Councillors	Mr Murdoch De Baar Dr Neil Gough Dr Robert Raven
Publications Committee	Dr Wendy Forno Mr Ted Dahms Mrs Natasha Riding

The main business of the evening was the Presidential Address of the retiring President, Miss Margaret Schneider, entitled "A History of the Study of Diptera in Australia".

It is planned to hold the Perkins Memorial Lecture this year, on 9th September. Details of this lecture will be announced in the next News Bulletin.

Margaret Schneider
Representative Councillor

INSECT PHOTOGRAPHY

By Peter Wilson, P.O. Box 585, Gympie, Qld

Introduction

In order to quickly photograph live insects of any size and at any time, I devised the following method in 1967. I still use it today.

My present equipment, usually hand-held, consists of a 35 mm screw-mount single-lens-reflex camera body (Ricoh Singlex), automatic extension tubes, 50 mm and 100 mm macro lenses (Pentax) with automatic diaphragms, two lens-mounted or camera-mounted computer electronic flash units (Sunpak) set to fire on 'manual', home-made flash holders, and colour film of either 25 of 64 ASA.

The essence of my method is that, long before I take any photographs, I calculate the optimum exposure conditions at every magnification and carry a summary of the results with me when I am in the field. If I see an insect, I have little more to do than walk up to it, bring it into focus and release the shutter -- correct exposure, great depth of field, action-stopping speed and an insect magnified to fill the viewing screen are assured in advance. The method makes no attempt to solve the problem of bringing a moving insect into focus, but it does allow you to freeze the movement and obtain a possibly good photograph if you happen to get it in focus manually.

The method is not perfect. I cannot photograph a ladybird one second and a butterfly the next, for the difference in magnification necessitates a change of extension tube -- a change which might take a minute or two to effect. Naturally, there are also problems with insect behaviour, the background behind the insect, composition, best position of the flash heads, etc. Neither is the method useful for insects smaller than ladybirds. For very small insects, I prefer to take the insect and its surroundings indoors, where I can use tripods, reversed lenses and the like.

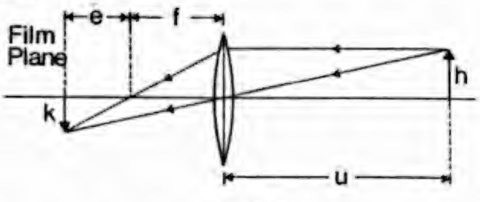


FIG 1

Basic Photographic Optics

A camera lens focuses in the following way (see Fig 1):

Let: h = height of the object in focus,
k = height of the image formed on the film,
u = lens-to-object distance,
f = lens focal length,
M = magnification
e = distance of forward travel of the lens (including any length of extension tubing or bellows);

then, from geometry:

$$M = \frac{k}{h} = \frac{e}{f} = \frac{f + e}{u};$$

that is,

$$M = \frac{e}{f} \quad \ldots\ldots\ldots\ldots\ldots\ldots\ldots (1),$$

$$h = \frac{k}{M} \quad \ldots\ldots\ldots\ldots\ldots\ldots\ldots (2),$$

and

$$u = \frac{f(f + e)}{e} = \frac{f(1 + M)}{M} \quad \ldots (3).$$

No matter how complex the design of a camera lens, it acts as a simple lens except that its focal length in each axial direction is measured from two points called front and rear nodal points. The above equations, however, still apply. Generally, the distance between the two nodal points is small and may be neglected using my method. Also, the focal length of a camera lens may differ up to about 4% from the nominal value stamped on the lens barrel, but the error involved in simply using the nominal value is again negligible. Remember, however, that individually small errors add up. In assuming that the distance between the two nodal points is zero, we introduce another error by having to guess where the centre of our lens would be if it were a simple lens. With my two macro lenses, I simply assume that the lens centre is a distance ahead of the film plane equal to the lens focal length. Generally, the total error involved in these approximations will be negligible unless your lens design happens to be of zoom telephoto (which is not synonymous with long focal length) or catadioptric type or you decide to complicate matters by using a tele-converter. You can still use my method with such lenses, but a little more thought will be required.

A lens transmits a cone of light into the darkness inside the camera and, like the light from a torch at night, the intensity of this light decreases with distance in accordance with the inverse-square law. If, for example, the area lit by the cone when the lens-to-film distance equals f (i.e. when the lens is set to infinity) is A, then the area lit by the cone when the lens-to-film distance is 3f will be 9A (see Fig 2).

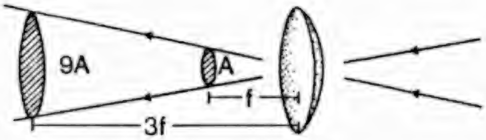


FIG 2

In other words, the intensity of light at any point on the film will be only one-ninth of what it normally is and the film will therefore be darker than normal by a little over three stops ($\frac{1}{2} \times \frac{1}{2} \times \frac{1}{2} = 1/8$). To be precise, the effective f-number (E) at the film will be 9 or 3 times the indicated f-number (N) shown on the lens. Similarly, if the lens-to-film distance is (f + e), then:

$$E = \frac{(f + e)}{f} N = (1 + M) N \text{ .... } (4).$$

It is E, not N, which determines the correct exposure of the film. Thus, when using electronic flash set on 'manual', correct exposure is given by:

$$G = E D \text{ .... } (5).$$

where: G = flash guide-number
D = flashtube-to-object distance.

Perusal of equations (1) to (5) reveals that, even before we take any insect photographs, we have all the information we need to ensure success. For every value of e, we know what the magnification will be, we know how far away the insect will be when it is in focus, and we know the value of N we must set on the lens to ensure correct exposure. Instead of leaving everything to chance, however, why not, in advance, purchase or make the right equipment so that, over a larger range of magnifications, the solutions to equations (1) to (5) will yield values of N close to 16 or even 22 to ensure great depth of field as well as correct exposure and action-stopping flash speed? This is just what I do.

Equipment

The camera must be a single-lens-reflex. If it has the shutter in the lens, that is fine, for that allows flash synchronisation at any speed. If it has a focal-plane shutter, choose one with a flash synchronisation speed of 1/60th sec. or faster (my Singlex synchoronises at 1/125th sec.). The reason is that, even though you are using flash, you are still exposing the film to sunlight, and when you are photographing larger insects at necessarily greater flash distance, you will eventually reach a stage where the insect is exposed more by sunlight at a very slow speed than by electronic flash. The faster the flash synchronisation speed, the larger the insects you can photograph in action in bright sunlight without sunlight blurring the picture.

I chose extension tubes rather than bellows because of their lightness, rigidity, durability and automatic diaphragm operation. I bought 8 sets (24 tubes), giving a total extension of 464 mm. To overcome cumulative internal friction, which impaired automatic diaphragm operation, I joined 21 of the tubes together to make only 3, each with a new diaphragm-operating mechanism. With the new total of 6 tubes, I could still achieve every intermediate length obtainable with the original 24. To eliminate internal reflection, which proved unacceptable at most extensions, I filed all internal cylindrical surfaces until they became sharp edges, and then painted the entire internal surface photographic matt black.

The ideal lens for my purpose is in the range 90 mm to 105 mm focal length, and it must have an automatic diaphragm. Any more than 135 mm and the flash distance becomes excessive; any less than 85 mm and insects think you are too close. Most importantly, the lens barrel must have two smooth cylindrical surfaces spaced apart a fixed distance sufficient to allow a flash-supporting structure to be rotatably mounted on the lens barrel. My 100 mm lens is my main lens. I use the 50 mm only for insects so large that to use the 100 mm lens would result in a flash distance so great that there would be too little depth of field and too much recorded sunlight.

The flash units must be as powerful as possible without being too large to be mounted on the lens or so heavy that you cannot easily carry the camera in the field. Nowadays you can buy computer flash units which can be set to fire on 'manual' at extremely short flash durations. Each of my Sunpak units (1976 vintage) weighs 350 g with batteries, has a manufacturer's guide-number of about 21 m at 64 ASA at full power, and can be set to fire on full, ½, ¼, 1/8 or 1/16 power.

My flash holders, designed specifically to fit my flash units and my lenses, are necessarily unique and require much forethought. They must be light yet rigid, and must allow for tilting of each flash unit so that it faces the insect no matter how close or distant it is. I make mine from a single aluminium sheet about 3 mm thick cut and bent along numerous dotted ines to form a three-dimensional structure. The flash holder for my 50 mm lens is attached to the tripod socket of the camera body, for there is no practical way of attaching it to the lens. This prevents rotation of the flash units about the lens, and so if the flash unit must point from a certain sector I have to hold the whole camera and its attachments sideways or even upside-down as required. Each flash unit is attached to its flash holder by a ball and socket connection, tilting being achieved by a simple rotation of the flash unit about the axis of the shaft connecting it to the ball. Lines painted on the flash holder indicate the angle of tilt. Mounting the flash units so close to the insect involves checking to make sure that the object area in focus at every magnification is lit fully by both flash beams.

Calculations

In practice, my first task when I see an insect is to estimate its size (e.g. 45 mm long), which tells me roughly what the object area in focus needs to be (e.g. 60 mm x 40 mm). I then consult a small table which tells me at a glance what combination of lens and extension is most appropriate for this object area, what power ratio (e.g. ¼ power) should be set on the flash units, what the flash tilt angle should be, what value of N should be set on the lens, and by how many f-stops the combined electronic flash beam is brighter than sunlight. Such information is obtainable only by prior calculation.

My first calculations yield M, u and the object area in focus at each of the 64 steps of magnification allowed by my extension tubes. The macro lenses themselves, however, have a wide and continuous focusing range equivalent to a number of extension tubes together, and so I also mark off this focusing range into a number of steps. I do not use all possible steps (704 in the case of the 100 mm lens!), but select only the most useful (179 for the 100 mm). Magnification is calculated from equation (1); object area from equation (2) (k is 36 mm x 24 mm if you use film frame size, or 33 mm x 22 mm if you use the view through my Singlex viewfinder); and u from equation[3].

The next task is to calculate D, the flashtube-to-object distance. The design of the flash holder for my 100 mm lens is such that the tilt axis of the flash unit lies in the plane of the estimated lens centre when the lens is set to infinity, but lies increasingly behind the lens centre when the focusing ring is turned. This arrangement of the 100 mm lens and its flash units is shown in Fig 3.

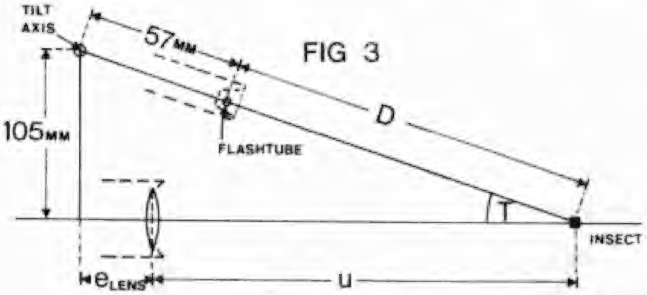


FIG 3

Clearly, $(D + 57)^2 = 105^2 + (u + e_{lens})^2$;

that is, $D = \sqrt{105^2 + (u + e_{lens})^2} - 57$ .. (6),

where, e_{lens} = distance of forward travel of the lens ahead of its infinity setting (but NOT including any length of extension tubing behind the lens.

Also, the correct flash tilt angle is clearly given by:

$$T = \tan^{-1}\left[\frac{105}{u + e_{lens}}\right] \text{..................... (7).}$$

Having calculated D and T, I now determine by experiment the guide-number of the flash units at each power ratio setting. The reason for doing this now rather than earlier is that the guide-numbers obtained now will 'absorb' any errors in the system. I first estimate what the guide-number is likely to be (about 70% of the manufacturer's rating; or, for both flash units firing together, the manufacturer's rating for a single unit) and then, using a suitable object (e.g. a dead hesperiid butterfly placed on some grass) and the new equipment set to a suitable magnfiication (e.g. M = 1), I calculate the corresponding value of N. Using colour transparency film, I take about seven photographs of the object, the middle one being exposed at N, but those to one side being progressively ¼ stop, ½ stop and 3/4 stop less, and those to the other side being ¼ stop, etc. more. I do that for each of the five power ratio settings, thus determining five guide-numbers with only one 36-exposure film. When the film is processed, I pick the five correctly exposed tranparencies and calculate the true guide-numbers from the values of N which produced those correct exposures.

The only task remaining now is to calculate N using equations (4) and (5). For every step of magnification, my calculations yield a choice of five combinations of N and power ratio, a typical example being:

full power (1/1500th sec.) ..... N = 47
½ power (1/4000th sec.) ..... N = 30
¼ power (1/7000th sec.) ..... N = 22
1/8 power (1/18000th sec.) .... N = 13.6
1/16 power (1/29000th sec.) .... N = 10.7

Obviously there is no advantage here in using full or ½ power - the only real choice lies with the other three combinations. I calculate my master tables for maximum depth of field and so in this case use ¼ power, but if I wanted a shorter flash duration or wanted image definition unaffected by the effects of diffraction I would use 1/8 or 1/16 power.

There is no need with my method to calculate depth of field or know much about it, unless you believe that it will be increased by fitting a neutral density filter to a lens already set to its smallest aperture (it won't), or increased by using a lens of smaller focal length (it won't in any close-up work).

If you use my method of insect photography, you will be a bit sceptical when you are taking your first insect film outdoors that every frame will be perfectly exposed, but you will soon find your doubts unfounded.

If you use this method of insect photography, all I ask is that you acknowledge where it originated. For further details contact Peter Wilson, P.O. Box 585, Gympie, Qld, 4570.

ENTOMOLOGICAL BOOK FAIR

The Entomological Society of New South Wales will be holding a major entomological book evening at the Australian Museum from 7-10 pm on the evening of July 3rd 1985. Mark the date in your diary now.

PROPOSED DOINGS

Books Sales:

1. The Museum Bookshop will have a range of natural history books and goods for sale.
2. Australian Entomological Supplies will have a large range of new and secondhand books and journals for sale.
3. Antiquarian book dealers will have a range of secondhand entomological books for sale.
4. Bring those entomological books of your own you no longer need - sell them and buy something you want.

Displays

1. Display of rare entomological books from Australian Museum library.
2. Display by Australian Butterfly Company of exotic entomological books and some of the spectacular insects illustrated in them.
3. Bring one or two of your favourite entomological books for inclusion in the Members and Friends display.

Lectures:

1. Early Australian Entomological Literature
2. Australian Entomological Literature today
3. Entomological book collecting

This should be a memorable night for bibliophiles.

FOR FURTHER INFORMATION ring Max Moulds on (02) 487 2792 (day or night), or write to him c/- Entomology Department, Australian Museum, P.O. Box A285, Sydney South, NSW 2000.

LETTER TO THE EDITOR

Dear Sir,

I noted with great interest the discussion on D'Abrera's Field Companion in the February issue and your invitation to readers for comment. As I have reviewed the book elsewhere I do not wish to discuss its content but rather the remarkable claim by Crossley and Miller to have devised a test to compare the relative utility of two different books. Speaking as one with responsibility for training students in both biophysical and social science areas I am dismayed that such a naive appreciation of research should be demonstrated by a Senior Lecturer in Psychology. Undergraduates in Australian Universities who study any of the social sciences normally receive a thorough grounding in sampling, survey and statistical techniques. Psychology departments are particularly noted for the extent to which students are obliged to study statistics (at the University of Western Australia when I was an undergraduate, psychology was known as 'rats and stats'). This makes it even more astonishing that Crossley should publicly present such poor analysis.

Before assessing the value of the test devised by Crossley and Miller much more information would be required but one thing is certain, the sample is both minuscule and biased. This fact alone makes any conclusions indefensible and the results quite worthless.

Had a test been devised and executed in a competent fashion it may indeed have made a contribution to our understanding of field guide design. There is probably a nice project in it for an undergraduate somewhere!

Peter S. Valentine
Senior Lecturer in Geography
James Cook University of North
Queensland
10.iv.1985.

CORRECTION

The Five Mile Press inform me that the statement on p. 27 of the February News Bulletin (Vol 21, Part 1) that they are preparing a book on caterpillars for publication was premature. Its publication is no longer contemplated.

Editor

NEW BOOKS

Biogeography of the Tropical Pacific. Edited by Peter H. Raven, Frank J. Radovsky and S.H. Sohmer. Published by the Association of Systematics Collections in collaboration with the B.P. Bishop Musuem.

This book, which is dedicated to the late J. Linsley Gressitt, records the proceedings of a Symposium held in 1982. It presents an interdisciplinary synthesis of current biogeographic thinking on the tropical Pacific. Distributions of plants, butterflies, amphipods, molluscs and birds are examined in light of known geological events and modern biogeography and evolutionary theories.

Softcover $35, hardcover $45. Available at discount price of $30 in softcover if ordered before June 30, 1985. All prices include surface postage and are in American dollars. Order from: Association of Systematics Collections, Museum of Natural History, University of Kansas, Lawrence, Kansas 66045. USA.

The Dynastinae of the World. By S. Endrodi. 774 pp. 1984 Junk. Series Entomologica No. 28. Price $163.00 Aust.

This work comprises a study of all known rhinoceros beetles and includes taxonomic keys. Available from D.A. Book (Aust.) Pty Ltd, P.O. Box 163, Mitcham. Vic. 3132.

Stastical and Mathematical Methods in Population Dynamics and Pest Control. Edited by R. Cavallaro, 256 pp. 1984. A.A. Balkema Publishers. Price $28.75 Aust.

This volume gives the proceedings of a meeting of a European Community Experts Group in October 1983. Papers are arranged in the following four sections: 1. Modelling and estimation of pest populations. 2. Data collection and analysis in pest control. 3. Methods for pest control. 4. Pest management systems. Available from D.A. Book (Aust.) as above.

Insect Conservation - an Australia Perspective. By T.R. New, 198 pp. 1984. Junk. Series Entomologica No. 32. Price $41.50 Aust.

This book explores some of the emerging principles of Insect Conservation, drawing together information accumulated in many parts of the world, and highlighting the application of these ideas to Australia. Available from D.A. Book (Aust.) as above.

1985 POSTGRADUATE RESEARCH PROJECTS IN ENTOMOLOGY

Introduction

In last May's issue of the News Bulletin I commenced a new annual feature by compiling a list of postgraduate projects in Entomology being undertaken at Australian Universities. Including additional projects listed in supplementary lists in the following two issues this exercise turned up the remarkable total of 199 projects spread across 32 Departments in 17 different Universities. There was an enormously favourable response to this listing and I believe it promoted a great deal of interchange between students (and supervisors) who otherwise wouldn't have known of each other's existence and interests.

The 1985 listing of projects appears below. This year we have located 203 projects in 36 Departments at 17 Universities. This has been compiled with the help of many people who have kindly provided lists for their institutions. Their names are shown in parentheses for each University. For those interested in such statistics the four Universities with the greater number of entomology projects being pursued within their walls are University of Queensland (30), University of Adelaide (22), University of New England (18) and University of Sydney (18).

I am anxious to receive corrections and additions to this list. Those forwarded to me will appear as a supplement in the next issue.

Geoff Monteith
News Bulletin Editor

UNIVERSITY OF NEW ENGLAND (Dr P. Gregg)

Department of Agronomy and Soil Science

Bodnaruk, K. Monitoring traps for phytophagous mirids in cotton (Dip Sc Ag)

Esmail, M.A. Ecology of *Heliothis* spp. in the New England area (M Rur Sc)

Gibson, R. Biological control and population dynamics of orchard mites (Dip Sc Ag)

Moses, N. Comparison of phoxim and fenitrothion for Plague locust control (B Rur Sc Hons)

Rath, A. Aspects of the pathogenicity of *Aspergillus flavus* for the potato moth (PhD)

Thompson, D. Control of European red mite by *Typhlodromus occidentalis* (B Rur Sc Hons)

Department of Zoology

Coombs, M. Acoustical biology of cicadas (BSc Hons)

Carruthers, G. Life cycle, fecundity and generation times of *Orgyia australis* under varying temperature regimes (BSc Hons)

Lawson, V. Comparative study of litter fauna in a subtropical rainforest at Mt. Glorious, Queensland (M.Litt, Animal Biology)

Sullivan, P. Investigation of the cochineal insect, *Dactylopius ceylonicus*, as a possible biological control agent of smooth tree pear. *Opuntia vulgaris*, in NSW (MSc)

Sukurai, Y. Ant communities in dieback and non-dieback areas (PhD)

Department of Animal Science

Banks, R.G. The effects of population structure on responses to artificial selection (*Drosophila*) (PhD)

Brodbeck, P. Blowfly strike - predisposing causes (M Rur Sc)

Del Bosque, A. An experimental analysis of group breeding schemes (*Drosophila*) (M Rur Sc)

Gifford, D.R. Effects of intense artificial selection for a quantitative character on genetic variability and selection responses (*Drosophila*) (PhD)

McRae, T.A. Life history evolution in *Tribolium castaneum* (PhD)

Shi, Y. Transposable elements, mutation and responses to artificial selection (*Drosophila*) (M Rur Sc)

Sweetnam, R. Variation in life history traits in a natural population of Tribolium castaneum (PhD)

UNIVERSITY OF QUEENSLAND (Dr E.M. Exley)

Department of Entomology

Chinajariyawong, A. Sap-sucking bugs on cotton (PhD)

Cribb, B. Sensory physiology of Lasiohelea townsvillensis (PhD)

Daglish, G. Relationship between host plant and development of Lepidopterous larvae (PhD)

Eisemann, C. Olfactory attraction of blowflies to sheep (PhD)

Evans, M. Ecology of insects on soybean (PhD)

Firempong, S. Selection of hostplants by Heliothis spp. (PhD)

Freebairn, C. Mermithid parasites of mosquitoes (PhD)

Gibson, L. Bionomics and behaviour of Zygogramma after introduction into Qld. as a biocontrol agent of ragweed (M Agr Sc)

Hagan, C. Bionomics of estuarine Culicoides spp. (PhD)

Hamilton, J.G. Population dynamics of cotton tipworm (PhD)

Hargreaves, J. Economic injury levels of Lepidoptera in Crucifers (PhD)

Harris, M.M. Taxonomic studies of Australian Ceratopogonidae (PhD)

Heard, T. Role of Trigona in pollination of Macadamia. (M Agr Sc)

King, J. Systematics of Megachilidae (Ph D)

Merritt, D. Ultrastructure of sense organs on ovipositor of Lucila cuprina and the central connections of their neurons (PhD)

Montgomery, B. Reproductive behaviour of some Chrysomya flies (BSc Hons.)

Mottram, P.P. Biology and ecology of Culex annulirostris (PhD)

Njagi, P. Chemoreception in female Qld fruit fly with emphasis on lure chemicals (MSc)

Patsias, A. Susceptibility of potato tuber moth to insecticides (M Agr Sc)

Qayyum, A. Effects of high temperatures on the survival of Heliothis armiger eggs (M Agr Sc)

Schneider, M. Systematics of Poecilohetaerus (Lauxaniidae) (MSc)

Singh-Asa, S. Sterilization of L. cuprina by gamma radiation (PhD)

Taylor, M.F. Nutritional ecology of Salvinia herbivores (PhD)

Velasco, R.I. Why there is population explosion of Nezara viridula on soybeans (PhD)

Walker, P. Pink spotted bollworm (PhD)

Yeates, D. Systematics of Comptosia (Bombyliidae) (PhD)

Department of Parasitology

Holdsworth, P.A. Transmission of bovine onchocerciasis with emphasis on vectors (PhD)

Home, D.J. Electron microscopy of tick feeding (PhD)

Pengelis, B.L. Study of Ixodes holocyclus with particular emphasis on reproduction (PhD)

Pugh, R.E. Fleas and dog-cat tapeworms (PhD)

MONASH UNIVERSITY (Dr G. Ettershank)

Department of Zoology

Barmuta, L. The microdistribution of macroinvertebrates in an Australian upland stream (PhD)

Boulton, A. The ecology of the macroinvertebrate fauna of temporary streams (PhD)

Browne, C. Components of polytene

chromosomes in *Sarcophaga bullata* (PhD)

Closs, G. Predator/prey relationships in a stream environment (PhD)

Coy, R. Nematodes and arthropods in soil and litter of *Eucalyptus regnans* forest (PhD)

Hamilton, J. Mandible wear and metamorphosis in grasshoppers. (BSc Hons)

Hill, D. Occlusal forces and efficiency in insectivory (BSc Hons)

Kotzman, M. Biology of growth in *Selenocosmia* (Araneae : Theraphosidae) (PhD)

O'Connor, N. Ecology of lowland streams in Northern Victoria (BSc Hons)

Roberts, B. Age pigment accumulation in sarcophagid flies (PhD)

Schreiber, S. Seasonality of stream drift (MSc)

Schwarz, M.P. Comparative social organisation and caste determination in allodapine bees (PhD)

St Clair, R. Taxonomy and ecology of larvae of family Leptoceridae (Trichoptera) (PhD)

Spangaro, G. Aquatic macroinvertebrates feeding on epilithic layers (BSc Hons)

Suren, A. Aquatic macroinvertebrates feeding on living plant material (BSc Hons)

Yule, C. Biology of Plecoptera (PhD)

GRIFFITH UNIVERSITY (Dr R.L. Kitching)

School of Australian Environmental Studies

Basset, Y. The Community of Insects associated with Rainforest epiphytes (PhD)

Hill, C.J. Diversity of butterflies in various habitats (PhD)

Lyonns, K. Comparative life history strategies of *Cephrenes* skippers (PhD)

Orr, A.G. Reproductive behaviour of papilionid butterflies with special reference to *Cressida cressida* (PhD)

Reinks, J. Ecology of spiders (PhD)

Scheermeyer, E. Overwintering ecology of danaine butterflies (PhD)

UNIVERSITY OF WESTERN AUSTRALIA (Dr W.J. Bailey)

Botany Department

Postle, A.C. The influence of differing soil and vegetation types on Jarrah (*Eucalyptus marginata*) forest soil and invertebrates (PhD) (supervised at W.A.I.T.)

Zoology Department

Hodge, A. The biology of leaf miners in Kangaroo Paws (MSc)

Traisiri, A. The control of blue green aphid by the parasite *Aphidius ervi* (MSc)

Supasatian, C. The mating behaviour of the Mediterranean Fruit Fly, *Ceratitis capitata* (MSc)

Heap, M. Studies of the stem borer *Zygrita diva* (Coleoptera, Cerambycidae) in legume pastures in N.W. Australia (MSc)

Woods, W. Biological control of *Parkinsonia aculeata* (based in Arizona) (MSc Agric)

Bunn, S.F. Ecology of invertebrates in streams of Jarrah forests in W.A. (PhD)

Barendse, W.J. Speciation of the bushcricket, *Mygalopsis marki* (PhD)

Cook, D. The reproductive behaviour of the West Australian dung beetle (PhD)

Dadour, I.R. Agonistic behaviour of the bushcricket *Mygalopsis marki* (PhD)

Dolva, G. The biology of forest nemobiine crickets (PhD)

Mazanec, Z. The biology of the Jarrah Leaf Miner (PhD)

THE UNIVERSITY OF SYDNEY (Dr F.J.D. McDonald)

Department of Plant Pathology and Agricultural Entomology

Allanson, R.B. Investigating strategies for nuisance fly control on poultry farms with emphasis on an integrated pest management approach (MSc Agr)

Campbell, Dianne. Study of the biology, taxonomy and host range of the bluegum leaf miner (MSc Agr)

Eldridge, R.H. Studies on the taxonomy and biology of the Australian Glyptotermes (Isoptera : Kalotermitidae) (MSc Agr)

Everingham, G. Biology and mixed function oxidases of Calogramma picta (Lepidoptera : Noctuidae) (MSc Agr)

Kotze, A. Glutathione transferases of the sheep blowfly Lucilia cuprina (Diptera : Calliphoridae) (PhD)

Macdonald, J.A. Biology of the Pergidae (Hymenoptera : Symphyta) (MSc Agr)

Reidy, G. Effect of Malathion and Paraquat on mixed function oxidases of rats and insects (PhD)

Rugg, D. Biology and ecology of some cockroaches of the sub-family Panesthiinae (Blattodea) (MSc Agr)

Russell, R.C. Vector studies related to mosquito borne diseases in Australia (PhD)

Sinclair, D.P. Taxonomic revision of the Tessaratomidae (Hemiptera : Heteroptera) (PhD)

Stevens, M.M. Taxonomy and biology of the Thymbrini (Homoptera : Cicadellidae) (PhD)

School of Biological Sciences

Kelly, Georginia. The role of the horehound bug on stands of horehound in augmenting the effectiveness of the biological control of the green vegetable bug by the parasitic wasp Trissolcus basalis (PhD)

School of Public Health and Tropical Medicine

Booth, D. Studies on Anopheles annulipes Walk. (Diptera : Culicidae) (MSc Agr)

Drew, M. Use of Bacillus thuringiensis for the control of mosquitoes (M Sc Agr)

Panter, C. Microbial aspects of the development of the fungus Culicinomyces for the biological control of insect vectors of disease (PhD)

Department of Biochemistry

Chappell, D. Uptake of symbiotically fixed nitrogen by termites (BSc Hons)

Riley, Fiona. Cellulases of termites and their symbionts (BSc Hons)

Department of Agricultural Chemistry

Dowton, M. Biochemistry of neuromuscular junction in flesh fly flight muscle (Diptera : Sarcophagidae) (PhD)

UNIVERSITY OF NEW SOUTH WALES (Dr R. Crozier)

School of Zoology

Nerona, E. Irradiation entomology (MSc)

Barraclough, D. Generic systematics of Dexiini (Tachinidae) (PhD)

Brown, G. A revision of the Australian Thynninae (Hymenoptera : Tiphiidae) with special reference to the genus Rhagigaster Guerin (PhD)

Crosland, M.J.W. Evolutionary genetics of Myrmecia, especially with regard to colony recognition (PhD)

York, A.K. Recolonization of native forests after fire, (Ants are the major group monitored) (PhD)

UNIVERSITY OF MELBOURNE (Dr J. Martin)

Department of Genetics

Bull, A. Phosphoprotein phosphatase in Drosophila (BSc Hons)

Calvi, A. Sex determining genes in Chironomous (BSc Hons)

Clarke, G. Genetic architecture and adaptation: a study in the Australian sheep blowfly, Lucilia cuprina (PhD) (on leave 1985)

Constable, S. Role of micro-organisms in the etiology of myiasis in Lucilia cuprina (PhD)

Fitzpatrick, J. Frequency dependent selection and dieldrin resistance in Lucilia cuprina (BSc Hons)

Hannan, F. Cloning neurological genes from the base of the Drosophila X-chromosome (PhD)

Leggatt, A. Insertion mutagenesis on the X-chromosome of Drosophila melanogaster (BSc Hons)

Michael, M. In situ hybridization studies in Chironomus (BSc Hons)

O'Rourke, M. Selection for insecticide resistance in uniform and patchy environments (in Lucilia) (BSc Hons)

Pasquini, G. Restriction map variation and gene activity in the Adh region in Drosophila melanogaster (BSc Hons)

Petrovich, T. Suppression of behavioural mutants in Drosophila (BSc Hons)

Tangney, S. Molecular characterization of neurological mutants of Drosophila (MSc)

Department of Zoology

Battams, J. Development of early nerve pathways in the embryo of Locusta migratoria (BSc Hons)

Barker, D. Experimental studies on axon pathfinding in the embryo of Locusta migratoria (MSc)

Evans, A. Acoustic behaviour of the small gryllids, Nemobiinae and Trigonidiinae (MSc)

Kavanagh, M. Acoustic behaviour of the mole cricket, Gryllotalpus sp. (MSc)

UNIVERSITY OF ADELAIDE

Department of Entomology (Dr D. Cooper)

Adidharma, D. Host plant interactions in biological control of Tetranychus urticae Koch (PhD)

Allen, G.R. Host selection of aphid parasitoids (M Agr Sc)

Bie, E.B. Influence of droplet size and distribution of an insecticide on the mortality of the grasshopper Chortoicetes terminifera (M Ag (Pest Management))

Dall, D.J. Biochemical aspects of Kashmir and Sacbrood viruses, pathogens of the honeybee, Apis mellifera (PhD)

Farr, J.D. The nutrition of Uraba lugens Wlk. (PhD)

Heath, D.B. A standard method for testing rotary airborne spray devices (M Ag (Pest Management))

Hergstrom, K.L. Towards the integrated control of the blue-green aphid, Acyrthosiphon kondoi (M Ag (Pest Management)) (Thesis submitted)

Hill, S.J. Pollination of Almonds (M Agr Sci)

Kassebaum, J. The evaluation of chemicals for the control of the Portuguese millipede Ommatoiulus moreletii (M Ag (Pest Management))

Mohamed, R.Y. Effect of mulches on the abundance of aphids and the greenhouse whitefly Trialeurodes vaporariorum on potatoes (M Ag (Pest Management) (Thesis submitted)

Morris, B. Taxonomy and physiology of blowfly larvae (M Agr Sc)

Nkunika, P. Studies of the castes and ecology of the dampwood termite, Porotermes adamsoni (Froggatt), in South Australia (PhD)

Prasad, Y.K. "On the efficiency of Rodolia cardinalis (Muls.),and its response to prey patches (PhD) (Thesis submitted)

Ramachandran, R. Host finding behaviour of Ectropus excursaria (PhD)

Rippon, G. Interaction of plant allelochemicals with the peritrophic membrane (PhD)

Rondonuwu, S. Biology and host plant

relations of Uracanthus sp. (PhD)

Washington, W.S. Studies on the susceptibility of cultivated blackberry varieties to Phragmidium violaceum, the cause of blackberry leaf rust, and fungicides for the control of this disease (M Ag (Pest Management))

Zhao, J.W. The influence of weather on the interaction of red scale of citrus (Aonidiella aurantii) and its parasitoids (PhD)

Department of Plant Pathology

Gibb, K.S. Cyrtopeltis nicotianae (Miridae) transmission of Velvet Tobacco Mottle Virus (PhD)

Department of Zoology (Dr A. Wells)

Browning, G.P. Taxonomy of Myrmecia Fabricius (Hymenoptera : Formicidae), with emphasis on the vindex species group (PhD)

Gardner, J. A revision of the higher categories of Stigmoderini (Coleoptera : Buprestidae) (PhD)

Reynolds, J.G. Predation by the notonectid Anisops deanei (Hemiptera : Notonectidae) on freshwater zooplankton (PhD)

AUSTRALIAN NATIONAL UNIVERSITY (Dr P. Gullan)

Department of Botany, Faculty of Science

Hawkins, C.D.B. The effects of aphids on their host plants' physiology (PhD)

Department of Zoology, Faculty of Science

Day, K.L. Geographic variation in centipedes (Grad Dip Sc)

Kim, S.P. Taxonomic revision of the Australian Homoneurinae (Diptera : Lauxaniidae) (PhD)

Lewis, M.J. The systematics and biology of Apina callisto (Lepidoptera : Agaristidae) (BSc Hons)

McCorquodale, D.B. Factors influencing communal nesting in Cerceris spp. (Hymenoptera : Sphecidae) in south-east Australia (PhD)

Moran, R.J. The systematics of the Australian Gnaphosidae: the genus Lampona Thorell (MSc)

Reid, C.A.M. The systematics of Australian Cryptocephalinae (Coleoptera : Chrysomelidae) (PhD)

Smith, J.M. Invertebrate grazing in a semi-arid environment (Grad Dip Sc)

Smith, C.S. Rearing of Phytoecia coerulescens (Cerambycidae) on artificial diets versus whole plants of Echium plantagineum at different temperature regimes (Grad Dip Sc. - to be submitted April 1985)

Department of Environmental Biology, Research School of Biological Sciences

Landsberg, J. Dieback of rural eucalypts: quality of foliage as food for leaf-eating insects (PhD)

Joint Genetics/Population Biology, RSBS

Marchant, A.D. Mitochondrial DNA variation in the Caledia captiva species group (Orthoptera : Acrididae) (PhD)

Department of Population Biology, RSBS

Rowell, D.M. Chromosomal and protein evolution in the family Sparassidae (Arachnida) (PhD)

Department of Neurobiology, RSBS

Maddess, E. Response properties of giant motion detecting cells in insects (PhD)

Osorio, D. Neural coding in the medulla of the insect optic lobe (PhD)

JAMES COOK UNIVERSITY (Dr R.E. Jones)

Zoology Department

Lokkers, C. Ecology of the green tree ant, Oecophylla smaragdina (PhD)

Duivenvoorden, L. The impact of insect herbivores on Salvinia (PhD)

Downes, M. Developmental studies of theridiid spiders (MSc)

Hudson, P. Population dynamics of medically important mosquitoes of the Ross River Dam (MSc)

Ramsay, B. Predator-prey relationships involving mosquito larvae (MSc)

Titmarsh, I. Population dynamics of Heliothis sp. on tobacco (MSc)

Tyndale-Biscoe, M. Age-grading and ecology of dung beetles (PhD)

Kay, I. Developmental biology of Eysarcoris trimaculatus (MSc)

Moore, G. Behavioural ecology of Mycalesis species (Lepidoptera : Nymphalidae) (BSc Hons)

Churchill, T. Distribution and habitat selection of Lycosa laeta (BSc Hons)

Seymour, J. Braconid parasites of Heliothis species in North Queensland (BSc. Hons)

MACQUARIE UNIVERSITY (Dr D.F. Hales)

School of Biological Sciences

Barker, S.C. Biogeography of lice on Queensland rock wallabies (PhD)

Bishop, A.L. A pest management programme for lucerne in New South Wales (PhD)

Claxton, S.K. The biology of terrestrial tardigrades (MSc)

Gillings, M.R. Ribosomal RNA genes in Drosophila melanogaster (PhD)

Gray, M.R.B. Systematics of funnel web spiders (PhD)

Holloway, G.A. Classification of the subtribe Mesostenini (Ichneumonidae : Phygadeuontinae) (MSc)

Kennedy, C.M.A. Biology of Australian Pseudoscorpionida (PhD)

Sales, N. (Aspects of insecticide resistance in Lucilia cuprina) (MSc) (provisional title)

Shuter, E. Arthropods on bracken (MSc)

Watt, F. Chromosomal proteins associated with gene activity in Drosophila melanogaster (MSc)

WESTERN AUSTRALIAN INSTITUTE OF TECHNOLOGY (Dr J. Majer)

School of Biology

Herlihy, M. The influence of insect and vertebrate herbivores on the regeneration of sand mined areas at Eneabba, W.A. (Grad Dip)

UNIVERSITY OF TASMANIA (Dr J.L. Madden)

Department of Zoology

Williams H. Studies on the geographical and seasonal distribution of Tasmanian calliphorid flies (PhD).

Department of Agricultural Sciences

Candy, S. Life table analysis of the developmental biology of Platypus subgranosus and an investigation of the pattern of attack on the host tree, Nothofagus cunninghamii (M Agr Sc)

Alishah, A. The ecology and control of cabbage pests with particular reference to crop phenology and biological control (PhD)

Ireson, J. Studies on Lucerne Flea and other collembola in the Tasmanian cultural steppe (PhD)

McQuillan, P. The identification, ecology and host plant relationships of some Tasmanian root-feeding cockchafers (PhD)

Miller, L. Theoretical and practical aspects of the formulation and application of entomopathogenic nematodes (PhD)

LA TROBE UNIVERSITY (Dr T. New)

Department of Genetics and Human Variation

Davidson, J. Ecological studies on natural populations of Drosophila (PhD)

Guerra, R. Resistance to phenylthiocarbamide and phenylthiourea in natural populations in Drosophila (MSc)

Hale, C. Population studies on Dactylopius opuntiae (Hemiptera) (PhD)

Tomasov, J. The ecological genetics of Chrysolina quadrigemina (Coleoptera) (PhD)

Department of Zoology

Buchanan, G.A. The biology, quarantine and control of grape phylloxera, Daktulosphaira vitifolii (Fitch), in Victoria (PhD)

Hewa-Kapuge, S. Ecological studies of the cabbage white butterfly, Pieris rapae L. (PhD)

Smith, I.R. Evaluation of insecticidal application techniques on pome fruit pests and their natural enemies (PhD)

Farrell, G.S. Comparative biology of two species of colonial scale insects of Acacia (PhD)

Hives, N. A study of the inter-relationships and ecology of a small group of salticid spiders (MSc)

McLaren, D. The diversity, succession and effects of grazing insects on plantation grown eucalyptus (PhD)

Ridland, P. The role of cereal aphids in the transmission of Barley Dwarf Yellow virus near Werribee and complementary laboratory studies (PhD)

Ewart, D. An ecological study of termites in Victorian mountain ash forests (PhD)

Sutton, N. A population model for the light brown apple moth (PhD)

Satasook, C. Effect of different varieties of grain on biology of some stored-product pests (PhD)

MURDOCH UNIVERSITY (Dr S. Bradley)

Department of Population Dynamics

Calver, M. Population dynamics and sexual dimorphism in Acrida conica (Orthoptera) (PhD)

McFadden, W. Environmental parameters affecting sheep blowfly behaviour (MSc)

UNIVERSITY OF WOLLONGONG (Dr R.J. Whelan)

Department of Biology

Tap, P.M. Insects and the role of refuges in post-fire succession in Heathland (PhD)

DEAKIN UNIVERSITY (Mr D.J. Moloney)

Biological Sciences

Moloney, D.J. An investigation of vegetation regeneration and small mammal recolonisation in fire-affected areas of the Airey's Inlet - Anglesea region, southern Victoria (PhD) (includes insect pitfall trapping and scat analysis)

COMING EVENTS

6th International Congress on Pesticides

To be held in London, Ontario, Canada, August 10-17th, 1986. Details from DR H.V. Morley, Station de Recherche Agricole de l'Universite, Sousbureau Postale Universitaire, London, Ontario, Canada.

3rd International Congress of Systematic and Evolutionary Biology

Brighton, England, 4-10th July, 1985. Enquiries to Professor C.B. Cox, c/- ICSEB Congress Office, 130 Queen's Road, Brighton, Sussex BN1 2WE, England.

9th International Symposium on Chironomidae

Bergen, Norway, 29-31st July, 1985. Enquiries to Dr W. Willassen, Museum of Zoology, Museplass 3, N-5000 Bergen, Norway.

4th Congress of International Association for Ecologists

Syracuse, New York, USA, 10-16th August, 1986. Enquiries to Professor F.B. Golley, Institute of Ecology, University of Georgia, Athens, GA 30602, USA.

3rd European Congress of Entomology

Amsterdam, The Netherlands, 25-29th August, 1986. Enquiries to Dr C. Davids, Department of Aquatic Ecology, University of Amsterdam, Kruislaan 320, 1098 SM Amsterdam, The Netherlands.

PROJECT WALLACE - AND A GLIMPSE OF AN EARLY COLLECTOR IN INDONESIA

Project Wallace, mentioned in passing in several reports in this and other recent issues of the New Bulletin, perhaps needs a little explanation for those who are not members of the Royal Entomological Society of London.

Arranged to commemorate the 100th Anniversary of that Society, and named for the pioneer evolutionist and biogeographer, Alfred Russel Wallace, Project Wallace is, quite simply, the largest entomological field exercise ever held. The locale is an extensive rainforest tract in the Dumoga-Bone National Park on the northern arm of the Indonesian island of Sulawesi (= Celebes) and it is in progress for a full 12 months from January 1 - December 31 of 1985. With full co-operation of the Indonesian Institute of Sciences and with extensive logistical support from the British Army a base camp has been established to provide accommodation and working facilities for 150 Scientists who will work there on a rotational basis during the course of the expedition. These scientists have applied and been selected for participation from countries around the world. Included among them are a number of Australians of whom those known to me at present are Roger Kitching, Bert Orr, Alice Wells, Barry Moore and Marianne Horak.

The expedition which is under the Field Leadership of Lt. Col. M.G. Allen has Dr. W.J. Knight, hemipterist at the British Museum, as its Expedition Director and Scientific Co-ordinator. Individual research proposals put up by the participating scientists are assigned to one of the following five Research Programmes, each with a Director:

1. Insect Diversity and Conservation Programme (Dr J.D. Holloway)
2. Forest Regeneration Programme (Dr A.G. Marshall)
3. Agricultural Entomology Programme (Professor H.F. van Emden)
4. Medical Entomology Programme (Dr G.B. White)
5. Geophysical Survey Programme (Lt. Col. H. Rose).

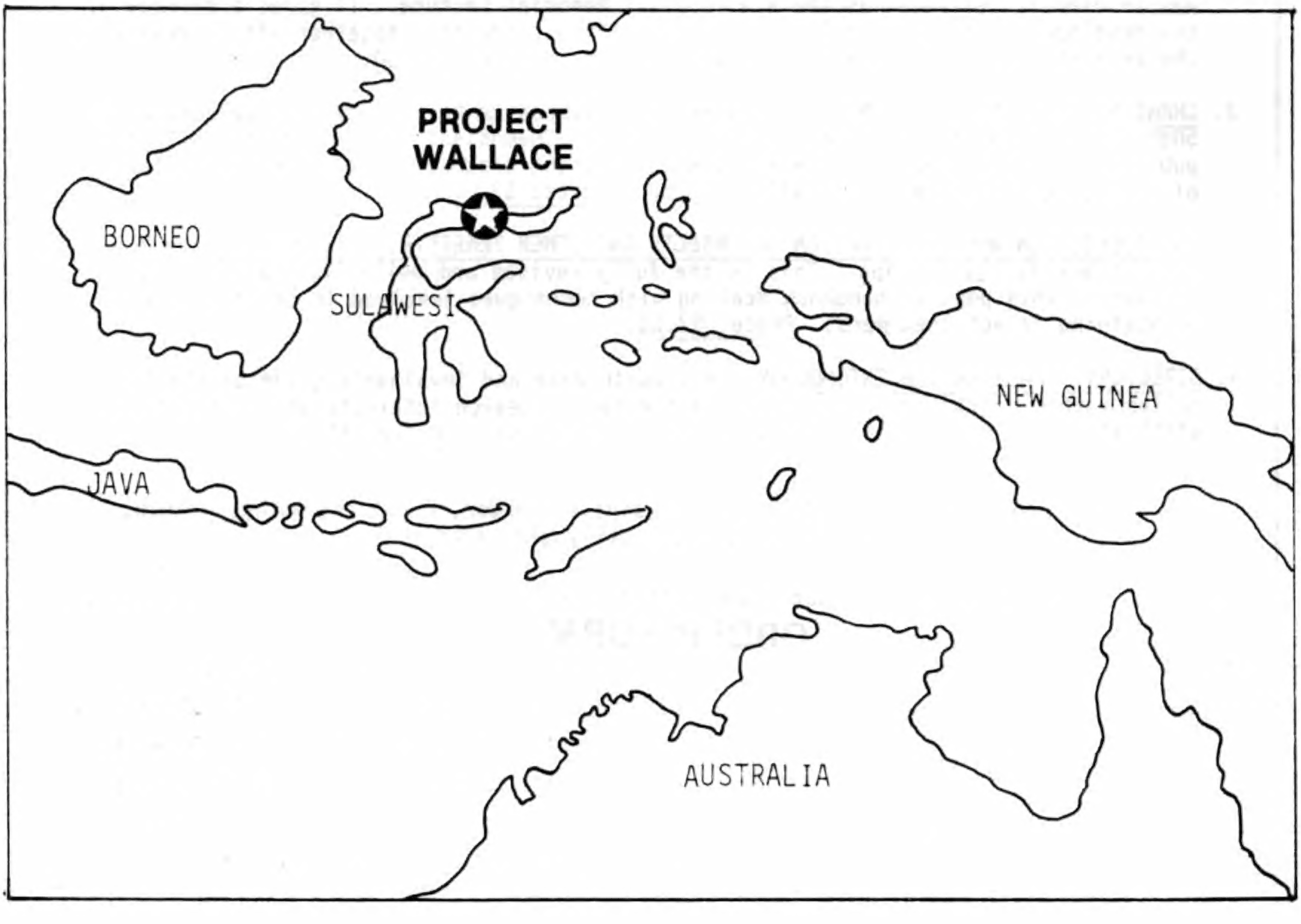
At a time when tropical environments are rapidly deteriorating due to overpopulation and exploitation this ambitious Project is indeed timely and we look forward to its results. Roger Kitching has already given a series of four entertaining talks on his impressions of Project Wallace on the ABC's "Science Show".

As a contrast to the modern trappings of Project Wallace it is instructive to think of how tropical field entomology may have been undertaken in Indonesia at about the time of Alfred Wallace. Thomas Horsfield was Keeper of the Museum of the East-India Company in the middle of the 19th century. The following quotation, from his 1857 "Catalogue of the Lepidopterous Insects in the Museum of the Hon. East-India Company", gives an insight into a collecting era (and a writing style!) long gone:

> "Deeply impressed with the importance and necessity of an accurate knowledge of Lepidoptera in all stages of their existance, I devoted, during several successive seasons, all the means at my command to the investigation of Javanese Lepidoptera; and it may be not out of place here to give a brief account of the method pursued by me. I lived at this time at Surakarta, a province in the interior, belonging to the native princes. I was amply provided with every convenience and facility for preserving what I had collected. Several draughtsmen had likewise been trained, under my superintendence, for botanical delineations; and the skill they acquired in those, soon fitted them for the annulose department. I was, therefore, enabled to enter upon a history of the Metamorphoses of Javanese Lepidoptera, a design which had long engaged my anxious solicitude. Although I did not, at this period, so fully conceive the paramount necessity of an acquaintance with the Metamorphoses of Lepidoptera, towards the establishment of a natural arrangement, as I have been led to do in later periods, yet I was so strongly impressed with its essential importance in attempting a complete history of Insects, that I commenced with a fixed determination to prosecute the inquiry

with unremitted industry and zeal, to collect all the larvae of Lepidopterous Insects which I might possibly obtain, and to trace them through the various periods of their existence. With this view, I fitted up a large apartment adjoining my residence with breeding-cages and receptacles for chrysalides. At the commencement of the rainy season, the period when, in tropical climates, the foliage of vegetables is renewed, I daily went out in search of caterpillars, accompanied by the most intelligent of my native assistants. The caterpillars thus collected were placed in separate breeding-cages, and several of the assistants were instructed to provide daily, at regular periods, the food the individuals required, and to secure the cleanliness of the cages. As soon as the caterpillars were approaching perfection, a drawing was made of them. The same individual which had been submitted to the draughtsman was then separately confined, watched with the most diligent care, and as soon as it had passed into the state of a chrysalis, again made the object of the pencil. A determinate number was carefully attached to the drawing and to the cage of the chrysalis. As soon as the perfect insect had appeared and expanded its wings, it was secured, set, and numbered, in accordance with the larva and chrysalis. During this period, every possible solicitude was employed to prevent mistakes. The original series, consisting of the perfect insects and the chrysalides obtained by this mode of proceeding, and numbered in accordance with the collection of drawings made at the same time, is now deposited in the Museum of the Honourable East-India Company, and affords an authentic document of the accuracy of the details regarding the metamorphoses of Javanese Lepidoptera, which will be offered in the course of this work."

(Geoff Monteith)



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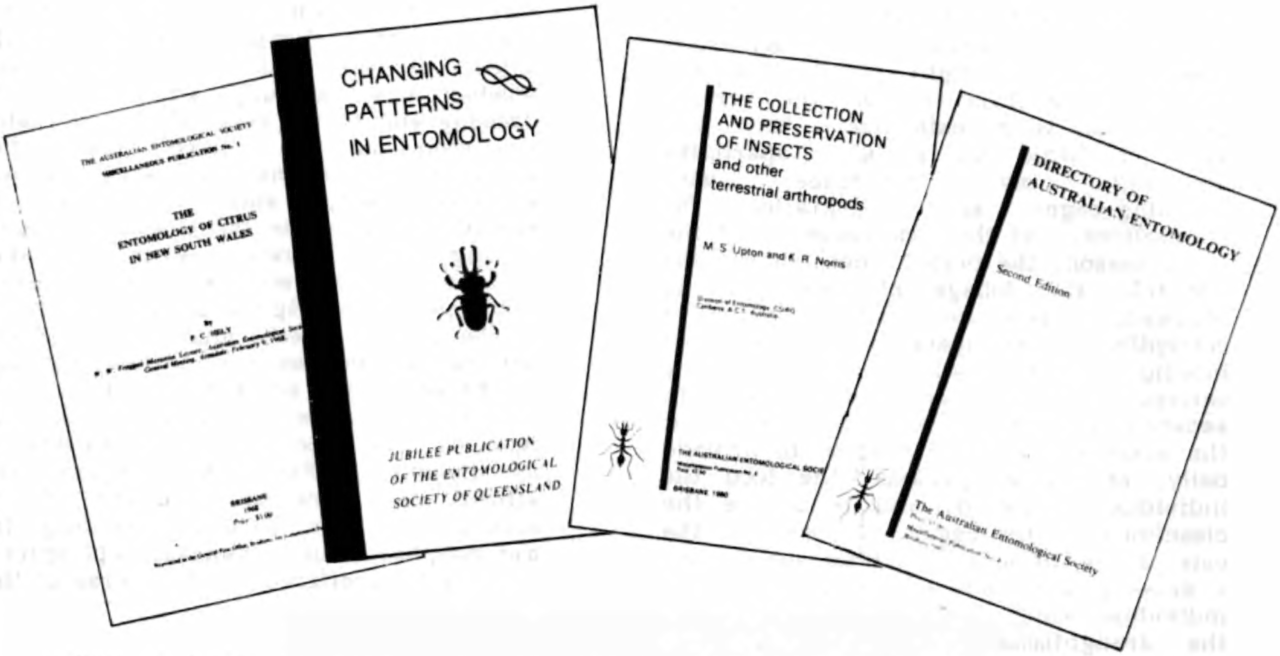

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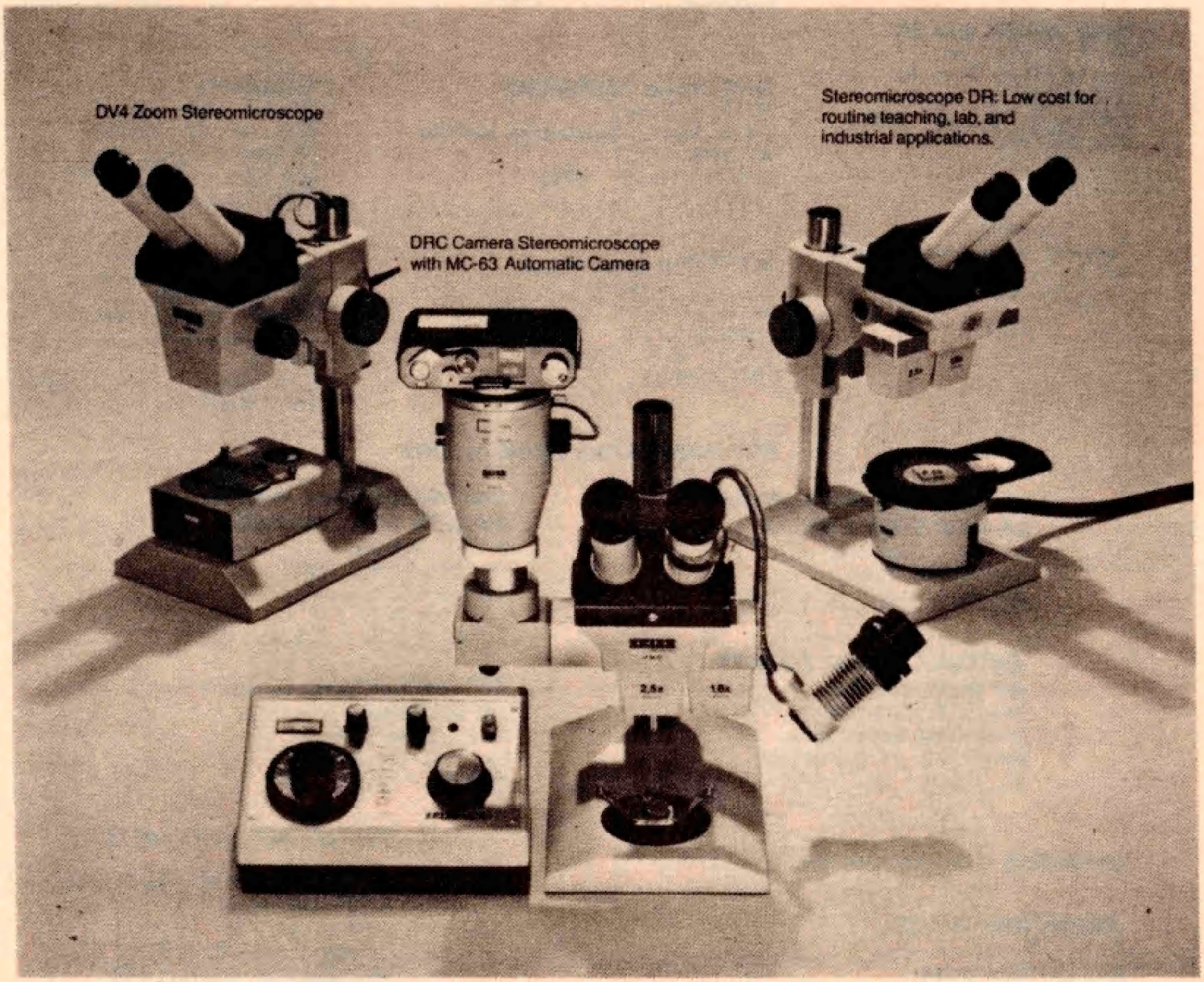

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